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USSR Report

ECONOMIC AFFAIRS

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USSR REPORT

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PLANNING AND PLAN IMPLEMENTATION

STATE COMMITTEE OF STANDARDS OFFICIAL COMMENTS ON PROCEDURES

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 12, Dec 83 pp 11-19

[Article by I. Isayev, deputy chairman of USSR State Committee for Standards: "Plan, Standard, Quality"]

[Text] Intensification of public production and boosting of its efficiency require creation, production and employment of new, technically more advanced machines and equipment, high-quality materials and progressive production processes. One of the most important directions of intensification is provision of high-quality production, improvement of its use and technical-economic characteristics. Under present-day conditions, a higher technical level and production quality constitute a basic source of labor-productivity growth, economy of all types of resources, growth of national wealth and expansion of export possibilities. Thus, an increase of 10 percent in the reliability and service life of machinery used in the national economy would make it possible through reduced outlays on current and capital repairs even while taking into account additional investment to increase the national income by 3 billion rubles and to release about 400,000 workers.

Improvement of production quality possesses tremendous, so far practically unutilized possibilities for the solution both of current tasks of economic intensification and for the attainment of the economic strategy of the CPSU. High quality of production is the equivalent of an actual increase of production volume. Here the effect is achieved as a result of economy of material and labor resources, more efficient utilization of fixed capital and reduction of capital investment.

In the country, a system of active state influencing of the quality of production is being created step by step (its mechanism and functioning organs are being formed). It relies on national-economic planning and state standardization and makes it possible to more purposefully plan, stimulate and control production quality (it provides both incentive measures for high quality and also economic and administrative measures of punishment for the production of poor-quality products).

At the present time, a fairly efficient system of production quality planning is in operation in the country within the framework of the national economy as a whole and on the level of individual industrial sectors, enterprises and

associations. In five-year plans of economic and social development targets are set for industrial ministries for production growth of products of the highest category of quality (or other indicators of production quality). On the basis of these control targets, ministries established in annual sectorial plans an indicator of the relative share of products of highest category of quality for enterprises and associations, pass on to them computation plan indicators for volume of production output in comparable prices. The system of quality planning also includes two kinds of plans--a plan for development of production of new products and a plan of state standardization, including specific production indicators, which are regulated by standards

A production standard reflects the norms of its use characteristics. It fulfills its progressive role if it takes into consideration the most advanced achievements of science and technology, is developed and adopted quickly and is rigorously adhered to.

Systematic renewal of the standards fund makes it possible to maintain their average age within the limits of 4.0-4.5 years and to constantly tighten requirements of production output. The new standards include higher values of productivity, reliability, service life and the standardization level of machines and equipment. They establish more rigid norms for expenditure of metal, fuel, electric power, expand the assortment of rolled metal products and provide for improved assortment and higher quality of a number of consumer goods. According to our calculations, it was possible to obtain solely through changes of indicators included in the standards revised in 1979-1981 savings of 250,000 tons of metal, 1.2 million tons of fuel and more than 500 million kilowatt hours of electric power. Thus a reduction of the indicator of metal intensiveness in standards for railroad cars and tank cars is the equivalent of a saving of 8,000 tons of metal in terms of their yearly output.

The present stage of the economy's development is characterized by a considerable expansion of specialization and cooperation of production, growth of the number of production ties between enterprises and organizations within the sector and on an intersectorial, all-union and even international scale. This not only complicates the organization and operation of the public production process but also boosts demands on cooperation of enterprises and organizations participating in the development, production and utilization of products. The forefront is assumed by questions of balancing of requirements for end products and their necessary components--raw and other materials, component parts as well as for various factors of an organizational, economic and social character influencing product quality and production efficiency.

Rules and norms of interrelations established in advance which are obligatory for all cooperating participants have achieved considerable importance. Two principal factors stem from this feature of the present period: the necessity of reciprocal coordination and stonger discipline in the fulfillment of standards. For this reason, the transition from development of individual standards to programs of integrated standardization for the most important types of products has now been a leading direction for the second five-year plan in a row.

The creation of comprehensive standardization programs is essentially new, there being no similar solution in world standardization. It makes it possible to actively influence the technical level and quality of products both within a sector and on the intersectorial level. Within the framework of the program, not only purely technical, engineering problems are solved, but a mechanism is formed for regulating and ensuring discipline in all spheres of public production.

A striking example of systems use of standardization in the solution of very important national-economic tasks is the USSR Food Program for the period to 1990 wherein it is written: "The USSR State Committee for Standards, USSR ministries and departments and councils of ministers of union republics are to ensure elaboration and realization of programs of comprehensive standardization, prescribing coordinated raising of requirements for quality of agricultural products and foodstuffs, mineral fertilizers, plant protection agents, containers and packaging materials for agricultural production as well as expanded use of modern methods of evaluating the quality of these products."[1]

Comprehensive standardization programs (and there are more than 30 of them) whose elaboration and realization has already been started within the framework of the food program are directly aimed so that methods and means of standardization contribute to unification of operation of agriculture, sectors serving it, transport, food industry and trade and to the subordination of their activities to a common end goal--production in the country of high-quality food products and getting them to the consumer.

As the result of realization of comprehensive standardization programs, industry and agriculture get standards establishing progressive requirements with respect to production quality and economy, organization of its production conducting of tests, packing, storage, transportation as well as in regard to operation and repair. Thus the comprehensive standardization program "T-150 and T-140K Tractors," developed by the Ministry of Tractor and Agricultural Machine Building, makes it possible to raise the technical-economic indicators of these models to the level of the highest achievements of domestic and foreign technology and to exceed similar foreign equipment in regard to general purposefulness and transport qualities. This will effectively contribute to the realization of the food program and to increasing the competitiveness of Soviet tractors on the world market.

In the country's national economy at the present time there are being realized 112 comprehensive standardization programs and coordinated indicators for about 1,700 state and 2,500 sectorial standards and technical conditions. Inasmuch as each of the programs includes tens and sometimes even hundreds of normative documents, their creation and realization would inevitably involve

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1. "Prodovol'stvennaya programma SSSR na period do 1990 goda i mery po yeye realizatsii. Materialy mayskogo Plenuma TsK KPSS 1982 g." [The USSR Food Program for the Period to 1990 and Measures for its Realization]. Moscow, Politizdat, 1982.

difficulties both as to time periods and as to level of indicators subject to mutual linkage and coordination. Ministries and even individual enterprises responsible for the output of end products must show greater determination in maintaining their requirements and not make compromises and their associated plants must handle this with understanding, on the basis of state interests.

Gosstandart should in the immediate years ahead carry out improvement of the structure and holdings of all existing standards and technical conditions, taking into account intensification of the national economy and acceleration of the rate of scientific-technical progress. Ministries and departments face the task of working out and establishing in Gosstandart progressive standards containing indicators based on a forecast of development of domestic and foreign science and technology and meeting the requirements of the national economy and exports not only of today but also of the future.

The purpose of conducting work on long-term [perspektivnaya] standardization is influencing through technical norms (which standards are) the acceleration of adoption of the newest achievements of scientific-technical progress by the national economy. For this it is necessary to establish in new standards such values of basic (most important) indicators of technical level and quality for groups of homogeneous products, the carrying out of which in the development and arrangement for production of specific products should provide a stable output of competitive products of the highest category of quality throughout the entire planned period of their production. It is understandable that the standards establishing long-term requirements in regard to the technical level, quality and economy of future new products should include an optimal minimum of the number of regulated indicators and be developed as a rule at the earliest stages of their life cycle, that is, within the context or on the basis of results of corresponding, search and forecasting scientific-research work. Their requirement will serve as the basis for preparation of technical targets in the conduct of experimental-design and experimental-production work aimed at the development and establishment of production of new products.

The main idea of the transition to the development and utilization of long-term standards is to be found in the creation of a reliable normative-technical connection between the results of exploratory scientific research and planning of new equipment. Such a transition requires, on the one hand, expansion and, on the other, serious simplification of the manner of working out standards and of the procedure of their coordination and establishment.

All targets and measures relating to standardization and metrology, including programs of comprehensive standardization and metrological support as well as resource provision for their introduction should be directly included in the scientific-technical programs. Such an approach would make possible not only a cardinal upgrading of the quality of standardization planning in the country but also, and this is most important, to create conditions required for raising the level of a comprehensive and purposeful solution of the most important problems relating to acceleration of scientific-technical progress on the basis of long-term standards.

Sectorial standards for specific products, realizing the requirements of long-term standards, will be developed by ministries and departments and their head and base organizations. A proposal is being examined simultaneously with the establishment of a long-term standard to set a time for its adoption and a minimally permissible level differentiated for enterprises of characteristics of produced production, but one that is no lower than, say, 0.7-0.8 of the indicators of the long-term standard. In the course of registration of a sectorial standard at Gosstandart, an assessment will be made of the degree of its approximation of the requirements of the long-term standard, which will serve as the basis for all financial-economic settlements with enterprises, including establishment of a wholesale price, awarding of bonuses to the collective, deductions into the social-development funds and so on.

In the establishment of a long-term product level, a major role and responsibility are now being assigned not only to developers but also to users. The decree of the CPSU Central Committee and the USSR Council of Ministers "On Measures for Speeding Up Scientific-Technical Progress in the National Economy" provides for the most important products development of technical proposals (so-called advance plans [avanproyekty]) on the basis of assignment by an enterprise or user ministry. At the same time, changes in an adopted advance plan are permitted to be made in the future only in coordination with Gosstandart and in some cases with the USSR State Committee for Science and Technology.

Realization of the directive on working out long-term standards is of exceptionally principled and revolutionizing value both for boosting the dynamism and effectiveness of the whole domestic system of standardization and for a cardinal improvement of normative control of technical progress in the country as a whole.

Together with planning, the system of state influencing of quality includes economic stimulation of enterprises and associations consisting of price markups and reductions and issuing of bonuses based on a special way of evaluating products in conformity with the category of its quality (certification).

Certification has well proved itself under the conditions of a planned socialist economy as an effective means of struggling for growth of the technical level and quality of products and for acceleration of scientific-technical progress. The relative share of products of the highest category of quality has so far been the only generalized indicator of the technical level and quality of produced output. With its aid, the operation of enterprises and ministries is assessed, socialist competition is organized and moral and material stimulation is carried out.

At the same time, significant defects exist in the practical work of certification. Cases are to be found of awarding the Seal of Quality to products not meeting the requisite requirements and sometimes where their production has been discontinued. For these reasons alone, Gosstandart and its regional organs each year take away the state Seal of Quality from 450-500 products.

Frequently, ministries and departments, for the purpose of meeting targets relating to the relative share of the highest category of quality, certify second-rate products to the detriment of products of most important national-economic value. Morever, the existing procedure of developing new types of products permits the possibility of classifying them under both the highest and the first category of quality. In this way, the development of new products is not done on the level of the best world achievements. The system of markups and reductions for manufactured products does not serve as a sufficient incentive for production of products of the highest category of quality. The provision of incentives for collectives of enterprises as well as for individual workers for improving the quality of products by means of use of deductions from additional profits into economic incentive funds is being done feebly. All this has created the necessity of working out a new procedure of certification of manufactured products for the purpose of improving the objectivity of certification and tightening of requirements for certification of products, first of all those marked with the Seal of Quality.

The new procedure should ensure, and this is prescribed by the decree of the CPSU Central Committee and the USSR Council of Ministers "On Measures for Speeding Up Scientific-Technical Progress in the National Economy," a significant upgrading of the technical levels of the most important products. This in our view will require: obligatory utilization in certification of products of the results of their testing; planning of the production of the most important types of products of the highest category of quality not only in terms of volume but also in terms of products list; establishment of a procedure in which targets for the development of new types of products are to be considered fulfilled only on the condition of them being awarded the highest category of quality; increasing motivation for production of certified products. And, finally, the time of certification should be tied into the time of modernization of products, wherein the norms of the latter also must be developed.

Beginning in 1983, in accordance with the decree, certification of manufactured products will be introduced for two categories of quality. The second category existing at the present time, which does not conform in regard to indicators of technical level and quality to the present-day requirements of the country's national economy and population, will no longer be conferred. It has been determined that manufactured products not certified with the highest or first category of quality are subject to removal from production. Only Gosplan USSR, on the basis of proposals and with the approval of the State Committee for Science and Technology, has the right to permit in the form of an exception the production of such products for no more than 2 years.

The nature of certification will be radically changed. In order to ensure its objectivity, it will be necessary to significantly improve the work of state certification commissions so that they will provide a high rating only for those products which actually correspond to world technical attainments or exceed them. The time has also come to organize rating of new products at the stage of issue of technical targets prior to putting them into production.

According to the existing procedure, ministries and departments, when certifying products, in accordance with an agreement with their users, frequently

included even obsolete products under the first category of quality so as to receive the right to put them out. Now certification (both for highest and for first category) will be carried out not by sectorial but by state certification commissions. At the present time, such commissions award only the highest category of quality, that is, the state Seal of Quality. They examine each year 40,000-50,000 certification cases. According to the new procedure, the work of state commissions will grow significantly. Moreover, it will be necessary to look after boosting the authority of these commissions.

It is necessary to create such conditions for the work organization of state certification commissions that there will participate in them the most competent of specialists, who will not only have to make qualification decisions but also assume responsibility for them. At the same time, it will be necessary to involve in the work of commissions consumers and orderers of products whose role in the creation of new equipment is being increased. Taking into consideration that a most important requirement of the decree is production of products that are competitive on the foreign market, it will be quite necessary to have the participation in the certification of products of specialists from the Ministry of Foreign Trade, and not only of exported products but of all without exception.

Following the introduction of the new certification procedure, there should be conducted, in our view, an effective certification of products that were awarded the Seal of Quality on the basis of the present (old) procedure.

Improvement of certification is closely connected with the improvement of all work relating to standardization, acceleration of working out of standards for the list of quality indicators and the introduction of advanced, long-term standards. Only under the condition of close coordination with planning by time periods, volume and designations of the production of high-quality products as well as with material-technical support of their production will certification become an effective factor of control.

The great dynamism of the park of equipment, rapidly changing production facilities, continuously improving technology, increasingly complex organization and control of the production process at all levels make it necessary to take a new look and, what is most important, to organize in a new way control and surveillance of standards. Whereas previously nonobservance of some one standard could occur harmlessly and even unnoticeably, today this would result in a breakdown of a whole chain of interconnections, as a result of which connections of the most important links of the national economy are broken, the rate of scientific-technical progress is reduced, quality is lost and the planned effect is underproduced.

State surveillance over product quality is done selectively both by items [po adresam] and by volume and by product mix, but without fail after their receipt by the technical-control services of an enterprise. At the same time, state inspectors for surveillance over standards and means of measurements throw out a significant portion of the products checked by technical-control departments. The main reasons for deficiencies resulting in nonobservance of the requirements of normative-technical documentation at a number of enterprises are: low production and technological discipline, poor work by

technical-control departments, occasionally lack of analysis of the operating and testing data of the manufactured products, inadequate cooperation with supplier enterprises with respect to raising the quality of supplied raw and other materials, semifinished products and component parts. There where production discipline is at its height, production processes are fully adhered to and departments of technical control perform their functions in a qualified manner while state-surveillance personnel do not find as a rule deviations from the requirements of normative-technical documentation and metrological rules. This attests to the fact that the level of production quality largely depends on the quality of work of the pertinent services of the enterprises and subdivisions of the ministry. In this connection, Gosstandart plans carrying out checks of the level of work on standardization, metrology and quality control at head and basic organizations, at enterprises, associations and ministries as a whole for the purpose of their certification of correspondence of prescribed requirements.

Unfortunately, in practice we frequently encounter serious violations of state discipline in the sphere of observance of the requirements of standards and technical conditions. Recently, mass checks were carried out of production of individual products and serious violations were disclosed both of the technology of their fabrication and also of standards. As a result a considerable body of unpopular goods has been accumulated in trade.

Enterprises putting out poor-quality products as well the organizations developing them must in full measure assume for this economic, material and moral accountability. In point of fact, many of them, while fulfilling plans for quantitative indicators and production of unpopular, low-quality products, continue to receive incentives like well operating enterprises, and their workers receives all types of bonuses and other rewards. Such a situation contradicts the economic laws of socialism and cannot be tolerated.

It should be admitted that so far Gosstandart and other controlling organs have not been fully applying economic sanctions and not in all cases of disclosure of violation of standards and technical conditions.

All this objectively calls for further increasing surveillance as a necessary element in the mechanism of exerting an influence on quality. This is all the more important because in conformity with the decisions of the November (1982) Plenum of the CPSU Central Committee a drive has been launched in the country for strengthening discipline and creating an atmosphere of intolerance of any kinds of violations.

Recently, a number of documents has been adopted, making it possible to activate state surveillance of standards and means of measurements. Thus, the USSR State Committee for Science and Technology, the USSR Ministry of Finance, the USSR Central Statistical Administration, Gosstandart and the USSR State Committee for Prices have approved a unified statute on the manner of applying economic sanctions for the violation of standards and technical conditions in accordance with which the sphere of application of economic sanctions has been expanded. While they were used formerly only in regard to enterprises in the sale of manufactured products, according to the new statute sanctions

can also be applied to: developer enterprises--in the development and production of products; agricultural, procurement, supply-marketing, wholesale and retail organizations and enterprises--in the sale of products and their storage; transport enterprises--in hauling of products (freight); enterprises, enterprises, organizations and institutions of the service sphere--in the rendering of services. This clearly regulates cases where economic sanctions should be applied for violations of the requirements of standards and technical conditions. An essentially new element in the statute is the introduction of deductions from existing wholesale prices or rates in cases of release by enterprises of products with temporary deviations from the requirements of normative-technical documentation by permission issued in the prescribed manner.

All this affects results. Sizes have been increased of economic sanctions applied by regional organs to slipshod enterprises. In the 9 months of 1983, 30 percent more poor-quality products were excluded from reports on plan fulfillment than for all of 1982. The number of cases is going down of local-preference or narrow-departmental influences exerted on state-surveillance personnel. The reaction of heads of sectors of the national economy to the results of our checks has become more principled, and the measures adopted by them have become more effective. By way of example, one can cite the principled position in these matters of the USSR Ministry of Nonferrous Metallurgy, the USSR Ministry of Light Industry, the USSR Ministry of Culture and the Ministry of Machine Building for Animal Husbandry and Fodder Production. And as a consequence, the effect of economic sanctions on technical-economic indicators of the operation of enterprises has become stronger. They are becoming a more effective factor in the struggle for improving product quality.

State-surveillance organs have been granted essentially new rights, particularly the right to stop the production of products till violations of standards, technical conditions or metrological rules are eliminated and to forbid turning over for production and use of design, technological and planning documentation and the right to make proposals for punishing persons guilty of violation of standards up to firing them from the position occupied by them. All these new rules should be familiarized by state-surveillance personnel so as to be able to use them effectively and influence even more strongly the process of quality control.

The effectiveness of economic sanctions is increased with their use in a complex with other accountability measures such as forbidding the sale of substandard products, credit-payment actions of institutions of Gosbank USSR, monetary fines of people's-control organs, deprival of bonuses and the like.

The effectiveness of state-surveillance work largely depends on publicity and the population being informed concerning adopted measures. It is necessary to see to it that an economic sanction becomes an event for an enterprise and a convincing example for educational and propaganda work on boosting state discipline. So far, unfortunately, collectives of enterprises and the public frequently are not informed as to what measures have been applied to a plant or factory on the basis of the results of a check, how these measures affected the enterprise's indicators and, finally, what damage has been done to the

national economy as the result of violation of standards. The practice should be expanded of examining the results of state-surveillance checks by the collectives of workers, especially after the introduction of the Law on Labor Collectives.

This discussion of the elements of the system of state influence on quality would be incomplete if still another function of standardization were not pointed out--the organizational role of standards. In recent years, they have become the organizational basis of integrated systems of control of product quality, the necessity of active introduction of which was emphasized in Basic Directions of Economic and Social Development of the USSR for 1981-1985 and for the Period to 1990 adopted by the 26th CPSU Congress.

Today more than 25,000 industrial enterprises and production associations have adopted comprehensive systems of product quality control. Analysis of the results of this adoption indicates a high level of effectiveness for them. Thus the relative share of products of the highest category of quality at enterprises that have adopted comprehensive systems is 1.5- to twofold higher than the average for a sector or region. Losses from defective output and replacement claims at these enterprises are 1/2 to 1/4 the number of those at other enterprises. The cycle of development and adoption in production of new products has been significantly shortened, and all types of material resources are being used more effectively.

The effect of standards within the framework of comprehensive systems is also spreading to other spheres of production activity--intraplant cost-accounting relations, brigade forms of labor organization, material and moral incentives, regulation of production and social factors in cadre work, solution of problems of scientific-technical development of production, better use of fixed capital and capital investment, provision of protection of the environment and labor safety.

At the present time work on the creation and introduction of sectorial systems of quality control is proceeding at 24 USSR all-union and union-republic ministries and departments as well as at many ministries of the union republics and all-union and republic industrial associations. Lying ahead are the electrical-equipment, electronic and the radio-equipment industry, instrument making, machine-tool building, heavy machine building and others.

Regional systems of quality control are being actively created. Regional systems make it possible to more fully utilize the scientific-technical and production potential of a region and to eliminate interdepartmental barriers. City systems have been registered in Moscow, Leningrad and Kiev, and a republic system--in Latvia.

The method of comprehensive solution of questions of improvement of production and quality of products incorporated in the standards can be rightfully considered a most valuable national-economic property. To bring this potential into operation is the task of ministries, enterprises and organizations of all sectors of the national economy and all state-control organs.

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PLANNING AND PLAN IMPLEMENTATION

ENTERPRISE PLAN IMPLEMENTATION INCENTIVES DISCUSSED

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 12, Dec 83 pp 20-28

[Article by Ye. Prigozhin, candidate of economic sciences: "The Enterprise Plan and Motivating Its Fulfillment"[1]]

[Text] The decree of the CPSU Central Committee and the USSR Council of Ministers "On Additional Measures for Expanding the Rights of Production Associations (Enterprises) of Industry in Planning and Operational Activity and for Increasing Their Responsibility for Work Results" provides a bigger role for enterprises in state planning and management. The fulfillment of state plans of economic and social development is achieved through coordinated operations of primary industrial units.

The effectiveness of the socialist economy depends on improved centralized planning with whose aid the places and shares of production units' participation are allotted in the creation of the gross national product and on growth of responsibility and incentives of enterprises in the fuller satisfaction of the needs of society for the products produced by them.

At the present time, objective conditions have been created for the successful solution of a number of important problems of improving the attitudes of different units of an economic organization along the line of strengthening mutual trust and cost accounting.

Recognition of the competence and responsibility of enterprises for the results of their work and stronger motivation in raising production efficiency obliges all organs of planning management to build their relations with enterprises on the basis of mutual trust and recognition of the reliability and validity of information coming from below. The creation of a climate of trust in a planned system determines the success of all undertakings in the area of improvement of the economic mechanism.

Cases are frequent in practice of the display of lack of trust on the part of sectorial organs toward drafts of production plans presented by enterprises, estimates of wholesale prices, normative net production, markups for high

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!. For purposes of discussion.

quality of products and the like. Changes in draft documentation of enterprises submitted to higher organizations are frequently not reinforced with engineering and economic calculations. This provokes in enterprise workers a corresponding reaction. Projections of planned targets start being presented artificially lowered and wholesale prices and net-production norms--overstated. As a result, reporting data are distorted, and plan and accounting discipline is violated.

The problem is no less urgent of regulating legal relationships among the units of an economic organization. They form the organizational structure of public production corresponding to the achieved levels of productive forces and economic relations. All elements of the national economy participate in economic relationships as subjects of law and bearers of rights and obligations.

The legal relationships of cost-accounting organs must be based horizontally on equal mutual responsibility for the fulfillment of assumed obligations, especially at the intersectorial level.

It is hardly possible to consider as fair any one-sided responsibility. As we know, measures of levying penalties on enterprises allowing overexpenditure of electric power or holding of railroad cars and other types of transport in loading and unloading operations are considered as legal acts. No need exists for questioning the rightness of these sanctions. The introduction of reverse measures of responsibility by means of fines or other sanctions for failure to provide enterprises with electric power or rolling stock and the like would be fair. The legal relationships of suppliers and users of products are also subject to definite regulation.

Production plans are aimed at the satisfaction of growing demand. The consumer is interested first of all in securing products that he needs in physical form, and he is little concerned by the fulfillment of plans of suppliers in cost terms. Fulfillment of plans relating to the volume of commodity and normative net Production by suppliers is not reflected in the activities of users of products. In this connection, the importance is increased of cost-accounting regulation of relations between them and their rates and responsibility for the fulfillment of deliveries of products in physical measurement. A statute on deliveries of products of production-technical designation must take into consideration the interests of the parties, strengthen bilateral ties and be flexible in the specification of quantities and times of deliveries. At the same time, in accordance with the statute , any changes in the conditions of deliveries of products are submitted by organizations that have set up a plan of attachment [plan prikrepleniya]. Such concern decreases the elasticity of the plan and economic ties and frequently results in overstocking of products for the consumer. Under the conditions of accelerated scientifictechnical progress, demand for goods is the most mobile category in production management. It must be taken into account. In a number of cases, consumers refuse ordered products beause of changes in the conditions of their production, while holders of stocks do not acknowledge such refusal and administratively oblige them to select the assigned stocks. As a result, above-norm physical assets accumulate in warehouses, state funds are immobilized and the level of satisfaction of society's needs is reduced.

The adopted direction of expansion of direct long-term economic ties between suppliers and consumers provides for expansion of their rights and responsibility in more precise determination of conditions of delivery and in compensation of damage both from disruption of schedules and completeness of sets and because of changes in contractual conditions.

It appears to be advantageous to review such important legal documents as the Statute on the All-Union Industrial Association and on the Production Association (Enterprise). The new statutes should describe more specifically their rights and obligations in the area of planning and cost accounting while taking into consideration pertinent decisions of the party and the government. At the same time, it should be taken into consideration that the administrative power of the VPO [all-union production association] over enterprises is not always used rationally. Not possessing its own balance nor working capital and not concluding economic contracts, the VPO is practically not accountable for the nonattainment of plan targets and contractual obligations by subordinate enterprises. Any blunders in its work affect exclusively the work of enterprises, although according to the statute it is specifically the VPO that is the cost-accounting organization. Frequently a VPO is not in a position to organize intersectorial production contacts. More often, enterprises themselves establish economic ties among each other.

VPO statutes should provide for their legal responsibility the organization and coordination of relations, coordination of approved indicators and provision of enterprises with stocks, limits, financial resources and also more precisely define the rights and obligations of primary units in the area of current planning and observance of plan and contractual discipline. It is necessary to grant to enterprises the right to refine with the concordance of higher organizations quarterly plans and to correct them within the limits of the control figures of the five-year plan. This will serve to strengthen subjection to law of an economic organ and regulation of functions in board structure.

No less important is the problem of validation of a plan target by engineering and economic norms. It is possible to provide it, on the one hand, with strict mathematical calculations at enterprises and, on the other, with the creation of such an economic environment as would stimulate the interest of the management of an enterprise in finding and utilizing reserves and in eliminating losses. In this connection, a significant role belongs to the system of approved indicators, their validation and cost accounting. For example, three leading indicators--volume of production output, labor productivity and number of personnel by categories--are tied in to the single norm of outlays of worktime and are aimed at motivating growth of production volume primarily through a rise in labor productivity rather than the number of participants in the production process. If it be allowed that the planned level of labor productivity is justified for a given enterprise, then any diversion of its workers from the sphere of production must affect fulfillment of targets relating to production output. At the same time, an absolute majority of enterprises fulfilled their plan targets for production volume in 1982 despite the diversion of 1.4 million of their workers to the supported economy [podshefnaya ekonomiya]. In some cases this is to be explained by the fact that

engineering and technical personnel, employees or workers of auxiliary services, that is, categories of personnel not directly participating in products manufacture are being sent to supported production units [khozyaystva] and in other cases--by overstating time norms for the performance of production operations, which make it possible to separate production workers.

In October 1983, the Politburo of the CPSU Central Committee studied the question of cases of unjustified diversion of workers from production. It was pointed out that at the present time aside from the organized participation of workers in work connected with completing the current year of the five-year plan, taking in of the harvest, startup of fixed capital and preparations for winter, the practice continues of diverting people for the performance of various kinds of secondary work not connected with production needs.

The Politburo of the CPSU Central Committee has required of republic and local party organs and of heads of ministries and departments to bring order to this important matter and to ensure strict fulfillment of the party's demand for improving production organization. It was emphasized that in those cases where diversion from basic work is necessary, all conditions must be provided for productive, effective labor.

Equally with organizational questions relating to improvement of planning and management, possibilities exist for improving material incentives for production efficiency.

The fulfillment of high plan targets and their successful fulfillment by an enterprise and its subunits depends on the selection of optimal forms and conditions of labor incentives. In addition to the basic form of material stimulation--wages, a growing role in raising the efficiency of production and quality of work is played by funds of material incentives, social and cultural measures and housing construction, development of production and economic levers and sanctions.

Boosting the relative share of bonuses in wages increases the influence of qualitative characteristics of the labor of each worker in evaluating his contribution to the end work results of the collective.

The system existing in the national economy of motivating efficiency of production and labor is constantly being improved. It designates the basic forms of increasing the interest of labor collectives in material and moral rewards of workers for their personal contribution to the end work results of enterprises as well as along the line of setting aside funds for the social development of collectives and for reequipment of production.

The new manner of forming incentive funds established for the '80s takes into consideration accumulated experience and deficiencies that have taken place. Among positive aspects, there should be pointed out before anything else the rejection of dividing norms into fund-forming and fund-correcting. Funds are formed on the basis of the actual work results of an enterprise. Provision has been made for increasing the output of new high-efficiency products and adoption of higher annual targets (compared to control figures). Thus the

dependence of the size of incentives funds on intensity of plans is increased. Restriction of the number of fund-forming indicators and direction of attention to growth of labor productivity and quality of produced products are also beneficial. Thus the fulfillment of quantitative indicators is becoming an obligatory condition of formation of funds, while their size depends on qualitative indicators of the work of collectives.

The institution of absolute sizes for incentive funds by years, as shown by the practical work of the 10th Five-Year Plan has reduced activity of collectives in raising production efficiency. Actually, in the beginning of the '70s, undesirable tendencies emerged of growth of wages moving ahead of growth of labor productivity. But the possibility existed of correcting the manner of fund formation through the establishment of computational norms providing scientifically based correlations of the rates of growth of these indicators in the conditions of formation. And at the present time, the system of economic incentives must be improved on the basis of the following principle: the better an enterprise operates and the higher the indicators of production efficiency, the bigger the incentive funds that it has at its disposal.

At the present time, differentiation of norms of formation of incentive funds is being specified for the first time by years of the five-year plan. This is aimed at increasing the stimulation of high intensity of plans in each year. If the fulfillment of the plan in one year required greater effort from the collective than in another, the objectivity of evaluating the contribution of the collective to production efficiency will determine uneven conditions of stimulating their labor and accordingly different sizes of annual economic-incentive funds. Such a differentiation primarily exerts an influence on those enterprises and associations where the plan provides for the startup or assimilation of new production capacities and fixed capital. Facilities exist in industry where the capacities are far from fully assimilated or utilized. In speeding up the process of assimilation of capacities, a major role can and should be played by the system of material motivation of collectives of enterprises. In this sense, differentiation of norms of fund-forming indicators by years is extremely important and useful. In the economic literature, opinions are stated of preferential rewarding of enterprises that have exceeded the average sectorial level of intensity of plan targets. But they deserve attention only with reference to the sectorial scale of stimulation of plan according to the level of utilization of resources, first and foremost production capacity. Differentiation of norms of fund formation contributes to the creation of equal conditions for enterprises of the same type in assessing intensity of plans and revealing those and revealing those that strive to adopt more intense plans. The adoption of average-sectorial levels of plan intensity as a point of departure cannot be progressive since averaging of indicators is possible only for assessing the attained work level of enterprises or in connection with average arithmetic data of plans being developed. These methods do not meet present-day requirements of validation of plan targets and of production conditions coming into being: series and assortment aspect of products, mechanization and automation of production, completeness of the means of production in regard to productivity and other characteristics. Only with the help of engineering and economic calculations is it possible to

determine objectively the production capabilities of enterprises and their labor collectives. The averaging of requirements, however, can result in underloading of some production facilities and the overloading of others. The same applies to comparison of intensity of plans for the current year with the preceding year and the differentiation on the basis of norms of formation of bonus funds on the basis of growth rates.

Qualitative shifts in the structure of tools and objects of labor, technology, organized forms of production and management and the character of labor activity are manifested in the final indicators of production efficiency.

At the same time, the tendency of growth of indicators should not always be tied into intensity of plan targets and their fulfillment and to build on this basis a system of economic stimulation. It would be more correct in our view to consider intensity of plan targets as a form of greater maximal utilization of production resources at each planning period while taking into account concrete changes in the material-technical base. Should the latter not undergo significant changes, the adoption of intensive plan targets will affect the simultaneous growth of production volume and of other quantitative indicators within the limits of the compared plan periods.

As shown by accumulated experience, in a number of sectors improvement of stimulation of intensive production plans was specifically based on the fulfillment of quantitative indicators. The successful solution of the question is connected with the development of sectorial norms of deductions going into economic stimulation funds on the basis of a scale of intensity of plan targets.

In evaluating positive tendencies in improvement of fund formation, there should be pointed out existing opportunities for increasing the action of bonus system directly on work results. In the '70s, a limitation was introduced on the size of a bonus award to the managerial staff of enterprises. In this way, interests were encroached of people on whom the discovery of the potential prospects of production and success in solving organizational, engineering, economic and operational tasks primarily depend. "The irreproachable democrat and humanist Marx," General Secretary of the CPSU Central Committee, Chairman of the Presidium of the USSR Supreme Soviet Yu.V. Andropov notes, "was a resolute enemy of wage leveling and categorically rejected demagogic or naive arguments, which were frequent enough in his time, about socialism as well as about "universal equality" in distribution and consumption.... Any attempts to deliberately exceed this potential degree, to go too fast to communist forms of distribution without accurately taking into account each one's contribution in the creation of material and spiritual benefits could give rise and does give rise to undesirable phenomena.... It is essential that the practice of material and moral rewards in combination with exemplary organization of labor retain and develop in people the consciousness of usefulness and need of their efforts and the products they produce."[1]

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1. Yu.V. Andropov, "Ucheniye Karla Marksa i nekotoryye voprosy sotsialisticheskogo stroitel'stva v SSSR" [Karl Marx's Teaching and Certain Questions in the Building of Socialism in the USSR]. Moscow, Politizdat, 1983, pp 13, 15, 17.

An evaluation of individual and collective contributions to the creation of material wealth requires a differentiation of bonus systems so that production pacemakers are not restricted to attained achievements and laggers feel the difference in distribution and consumption. We have accumulated quite a bit of experience in this sphere. At one time the Lvov system of quality control of labor and production (UKTP) was widespread. This was subsequently modified into the KSUKP [Comprehensive System for Production Quality Control]. It consists of a differentiated point system of evaluating the quality of labor of subdivisions and services of an enterprise according to the most important indicators of work and functional duties and then of performers.

The system has undergone a complex process of evolution: from the predominance in it of fine sanctions to an equivalent share of motivation of positive results and punishment for violation of production and labor discipline. But the system of point evaluations must be generalized and take into consideration changing requirements and tasks. The influence of individual factors should be increased, and it should be applied to a certain extent to the managerial staffs of enterprises. In particular, it would be useful to provide in the assessment of work of collectives such an important correlation as advancing growth of labor productivity over growth of wages, guaranteeing thereby a permissible level of payments from material-incentive funds. This will require the development of a differentiated growing norm, which will make it possible in a timely way to regulate and distribute the obtained gain between the state, the collective and the individual.

The idea of improving incentive is such that it should expand freedom of initiative and enterprise and eliminate the wage leveling factor in material incentives.

The practice of a differentiated approach to motivation of intensive current plans confirms the feasibility of this approach. At the Novokramatorsk Machine Building Plant imeni V.I. Lenin, the indicator of utilization of capacities was chosen as the object of stimulation. Analysis showed that the level of utilization of capacities was 90 percent in preparatory production and at the same time only 65-70 percent in machining. For the enterprise as a whole, the indicators of utilization of shop capacities were in the limits of 62-88 percent. The existence in some subdivisions of considerable capacity reserves made it possible for them to fulfill set targets with less strain, while plan intensity in the others was immeasurably higher. The need appeared of increasing motivation of shops with a high level of capacity utilization for the purpose of increasing the initiative of engineering and technical personnel and workers in shops with a capacity underload. Searches led to a differentiation of the bonus scale depending on the level of capacity utilization with a bonus growth of 5 percent for each 5 percent rise of plan-target intensity. Moreover, additional bonus norms were established in the amount of 0.3 percent for each percent of exceeding of plan, while in the case of its underfulfillment the bonus was reduced by 1 percent for each percent of nonfulfillment.

Experiments are being conducted at the Sumy Machine-Building Association imeni M.V. Frunze: a differentiated scale is being used successfully for awarding bonuses. Bonus sizes are determined by qualitative indicators, including the

amount of utilization of production capacity. In the awarding of a class place, overfulfillment of quantitative indicators is not taken into account. The motivation system was expanded with the indicator of output of high-quality products. Moreover, the timely fulfillment of organizational and technical measures, targets for reduction of production cost, growth of labor productivity, production of very important products and observance of a regular tempo is taken into account.

The experience of Moscow's Manometr Plant in improving equipment use is of interest. For the purpose of making labor more efficient and boosting the shift system of equipment operation, the worktime calendar table was changed. With the agreement of public organizations, the length of the second shift was reduced to 7 hours with subsequent working off of the calendar time in the first shifts of Saturdays. This decision is connected with the need of creating normal working and living conditions for workers residing in suburban areas. Single mothers and mothers of many children have acquired the possibility of daily doing housework and bringing up the children. For the purpose of increasing the interest of workers in two shifts additional benefits have been instituted--a grant for food in the plant dining room of up to 70 percent for both shifts, granting once every two years of summer vacations (instead of once every four years, first-priority issue of trip passes for rest, additions to the remuneration for the year's work results. This has made it possible in the course of three years to transfer to the two-shift regime about 100 machine-tool workers. The economic effect is estimated at 200,000 rubles for a five-year period.

The party's and government's everyday concern has been and continues to be growth of workers' well-being and the creation of conditions for creative labor, changing the content of labor processes and boosting workers' qualifications. Attention has been increasingly focused on curtailing harmful production processes, manual operations and on expanding cultural centers, improving housing conditions and developing preschool and therapeutic institutions and subsidiary farming.

Whereas material incentives as a component of wages serve as a means of distributing individual benefits among members of society, funds allocated to enterprises for social and cultural measures and housing construction are aimed at the solution of statewide social programs. One can cite in confirmation the practice of share participation of enterprises in the accomplishment of regional social measures, especially along the line of health-improvement, sanitary-hygienic, cultural-everyday measures and housing construction. Their accomplishment requires the collective participation of rayon and city enterprises. The lack of adequate funds for them in some enterprises for their share participation only moves back the time of fulfillment of general social programs.

At the same time, there are those social tasks which are aimed at improving the conditions of work and existence of workers directly at the enterprises. Insufficiency of funds for their fulfillment gives rise to cadre turnover and as a consequence to low work indicators.

Norms of formation of social-development funds should be established for enterprises according to a broadly differentiated scale within each sector from some minimum up to 100 percent of the material incentive fund. For this end, sectorial management organs must determine the special features of the social development of each enterprise and on their basis differentiate the sizes of funds of enterprises and regional complexes.

At the present time, prerequisites exist for increasing the motivation of enterprises in increasing the sizes of the production-development fund.

According to operative statutes, the sources of its formation are profit, amortization and the value of the retired property. Aside from these sources, it would appear to be practicable to also provide savings from payment for capital. There is set for enterprises an annual single interest of payment for capital in the amount of 6 percent of the value of the fixed production capital. Such an arrangement puts enterprises of different technical level and degree of effective capital yield under equal conditions. In our opinion, differentiation of payment for fixed capital depending on the progressiveness of used equipment and technology and effectiveness of employment of production capacity are practicable. For this purpose, the average sectorial norm should serve as a point of departure for its subsequent differentiation for enterprises depending on the state and use of the fixed capital.

For enterprises operating with obsolete equipment or with a low coefficient of the shift system and use of capacity, raised norms of capital payment should be used. Technically lagging enterprises ought not to have the same possibilities as leading enterprises in the distrubtion of economic gains and equal conditions for the formation of calculated profit as a source of formation of all economic incentive funds.

At the present stage, it would be proper to introduce a differentiated scale of norms (see Table).

At enterprises where capacity use level and achievements of science and technology are sufficiently high, from year to year it becomes more and more difficult to attain significant significant growth rates of production volume compared to enterprises not working at full strength. Let us examine by means of an example computation of pay for funds according to differentiated norms. Let us allow that the use coefficient of normative production capacity amounts to 0.89 in the case of its growth; the level of equipment and technology rises to 0.79, while the equipment shift and capital reproduction coefficients remain at the current level and correspond to values 1.6 and 0.04. Then the total norm of payment for capital is determined by the figure of 5.25 percent (1.4-0.2+0.7+ +23.5+1.0). Thus with an average sectorial norm of 6 percent for the given enterprise, it should be set at a level of 5.25 percent. With fixed capital valued at 20 million rubles, savings from reduction of payment for capital will amount to 150,000 rubles and the enterprise will put them into the production development fund. If the differentiated norm exceeds the intersectorial, then the enterprise is obliged to reduce the fund sum by a corresponding amount.

Table. Scale of Differentiated Payment for Fixed Capital on the Basis of Indicators of their Progressiveness and Use (Provisional Calculation)

Characteristics of progressiveness and level of capital use	Characteristics of evaluation	Payment norms for capital	Corrective coefficients	
			for growth (-)	for reduction (+)
Use of production capacity	Up to 0.8	1.7	0.1	0.2
	0.8-0.85	1.6	0.15	0.3
	0.85-0.9	1.4	0.2	0.4
	0.9-0.95	1.2	0.25	0.5
	0.95 and higher	1.0	0.3	0.6
Equipment and technology level	Up to 0.6	1.5	0.05	0.1
	0.6-0.7	1.0	0.1	0.2
	0.7-0.8	0.7	0.15	0.3
	0.8-0.9	0.5	0.2	0.4
Shift coefficient of equipment	Up to 1.3	5.0	0.2	0.4
	1.3-1.4	4.0	0.25	0.5
	1.4-1.5	3.0	0.3	0.6
	1.5-1.6	2.5	0.35	0.7
	1.7-1.8	2.0	0.4	0.8
	1.8 and higher	1.5	0.5	1.0
Reproduction coefficient	Up to 0.04	1.5	0.1	0.2
	0.04-0.05	1.0	0.15	0.3
	0.05-0.06	0.5	0.2	0.4

The system of differentiated norms can be developed while taking into account the special features of each sector At the same time, the size of payment for capital set for the sector as a whole should be reduced.

The examination of the question of differentiated motivation and payment for capital at recently started up enterprises and installations would also appear to be useful depending on the time taken to reach projected capacities. Their delayed assimilation occurs at almost every second facility. Many of them have installed equipment and still do not attain projected capacities on schedule. The basic reason for slowing down of the assimilation time are underloading of equipment, lack of machine operators, construction-installation flaws, defects in production organization and material support and the like. In many cases, during the first year of operation of facilities, projected capacity is used 27-30 percent, in the second--26-30 percent, in the third--17-20 percent, in the fourth 10-12 percent and so on. For this reason, when forming economic incentive funds there should be taken into consideration the getting ahead or slowing down of assimilation of projected capacities. As a rule, the new equipment fund serves as a source of bonuses for starting up new capacities. It would be more correct to make such a source part of the economic effect--of profit from the sale of additionally produced output compared to the long-term plan. Depending on the growing percentage of assimilation of projected capacity, the size of bonuses should also be increased by time periods or from additionally obtained profit.

Material rewards, the social development of collectives and reequipment of production have to depend on changes in production efficiency. The selection of tools is based in each period on specific conditions and tasks. The described proposals in regard to the calculation, evaluation and motivation of high plan targets and effective utilization of the production apparatus do not exhaust all the possible theoretical and practical recommendations. Wide-scale scientific and practical cooperation of specialists will contribute to the solution of urgent tasks relating to improving planning and economic stimulation of production.

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INVESTMENT, PRICES, BUDGET AND FINANCE

GOSPLAN OFFICIAL DISCUSSES INVESTMENT PROBLEMS, GOALS

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[Article by Vasiliy Isayev, first deputy chairman, USSR Gosplan [State Planning Committee]: "Current Problems in Increasing the Effectiveness of Capital Investments in the USSR"]

[Text] At the current stage of creating a material-technical base of communism and with the huge scope of capital construction, the overall increase in the effectiveness of capital investments and reduction in their recovery times take on particular significance. Capital investments into the national economy comprise 20 percent of the national income. In the years of the 9th and 10th Five-Year Plans, the largest construction in the country's entire history has been carried out. Fixed capital valued at one trillion rubles has been placed into operation, and 700 billion rubles will be mastered in the current five-year period alone.

With the growth in volume of capital investments, there is also a steady rise in the gross national product and in the national income as well as an increase in the workers' standard of living. The increase in productivity of social labor is also directly tied with this process. Almost double the amount of production is turned out per worker at enterprises which have been introduced into operation in the last 10 years as compared with those built earlier.

Capital investments, particularly into new engineering, and renovation of technology are effective factors in the intensification of industrial production and in increasing its effectiveness. Consequently, it is rather important to determine with scientific substantiation and subsequently to maintain such a level of capital investments as would ensure a stable growth and effectiveness of production. However, the growth rate of capital investments cannot be uniform over a long period. One of the peculiarities of the 11th Five-Year Period is the fact that increased growth in the national income (18 percent) is provided for the first time as compared with the increase in productive capital investments (10.4 percent). Such an economic solution presupposes the further improvement of technological production processes, which would make it possible to more rationally utilize natural resources, economize on raw materials, labor and material resources, reduce production losses, and utilize by-products.

A special place among the factors in intensification of production and increasing the effectiveness of capital investments belongs to acceleration of construction and faster development of project capacities.

Improving the technology and organization of building production, reducing labor- and material consumption, improving planning and design decisions and expanding the production of effective building materials all have great significance in reducing the construction time and in reducing its estimated cost. Such progressive tendencies have been considered in the plan for the 11th Five-Year Period, and are being realized.

Increasing the effectiveness of capital investments depends on the level of technical progress in the sector. It is specifically on this basis that it becomes possible to significantly lighten all building constructions (brickwork, reinforced concrete and steel structures, to increase their quality, reduce cost, reduce labor expenditures, and shorten construction duration.

A number of major construction organizations in our country which are part of the USSR Ministry of Installation and Special Construction Work, the Ministry of Construction of Petroleum and Gas Industry Enterprises, and the USSR Ministry of Power and Electrification have in recent years been able to solve one of the major scientific-technical problems -- to create and perfect the output of improved steel building structures which make it possible to reduce times for erecting production facilities. The experience of building numerous industrial facilities, compressor and pumping stations at gas- and petroleum pipelines and heat and power plants shows that timely completion or ahead-of-schedule construction of facilities has become possible due to the application of progressive steel structures, materials and technology, as well as conveyer-block assembly of buildings and structures and progressive forms of organization of labor in general.

This is how construction is organized at a limited number of facilities. According to the data of the USSR TsSU [Central Statistical Administration], the time remaining to the operational introduction of project capacities at enterprises under construction at the beginning of 1982 comprised an average of 4.9 years, while the average duration of construction for production facilities exceeded the normative value by 1.8 times. Under current conditions, when it is necessary to renew the basic technological equipment at industrial enterprises every 7-8 years, the question of reducing the duration of the construction cycle takes on particularly great significance.

A number of measures have been implemented in recent years which are aimed at changing this position. Over 100 plants manufacturing steel building structures with overall capacity of around five million tons of production per year have been built and are currently in operation in the country in order to expand the most effective methods of construction. The USSR Ministry of Installation and Special Construction Work provides for the production of two million tons of steel structures. Moreover, its enterprises have mastered the output of lightweight metallic structures supplied in assortment for industrial construction. For this purpose, 11 plants with overall capacity of 5,413,000 m^2 of buildings or 424,300 tons of lightweight steel structures per year have been built and introduced into operation.

The mass output of prefabricated buildings (modules) in complete set with sanitary technical and electrotechnical equipment, and even heating and ventilation systems, has been mastered at ministry enterprises. In 1981 they manufactured and delivered in complete assortment 112 buildings (modules) made of lightweight metallic structures, in 1982 -- 558, and in 1983 — 660 buildings (modules) with area of around 600,000 m^2. The application of such buildings (modules) will make it possible to reduce construction time by up to 3-4 months.

Due to the application of block-package units, the Ministry of Construction of Petroleum and Gas Industry Enterprises has ensured the reduction in times for erecting compressor and pumping stations, improving quality of construction and reducing cost. The manufacture of block-boxes and the installation of equipment in them is done at specialized plants. Then the block-boxes are delivered in completed form to the petroleum- and gas pipelines under construction.

The construction of compressor and pumping stations by the package-block method makes it possible to reduce the volume of construction-installation work on the average by 40 percent, and to complete construction in 1/2 or 1/3 the time. Only 2/5 the volume of cargo transport associated with the delivery of construction materials and equipment will be necessary, and the estimated cost will be reduced by an average of 20 percent.

These examples are evidence of the high effectiveness of measures associated with improving the technology of building production.

The following data give an understanding of the reserves for increasing the effectiveness of capital investments and social production as a result of reduction in construction time. At the end of 1982 the volume of above-norm unfinished construction alone which was formed due to non-fulfillment of the plan for operational introduction of capacities comprised 7.5 billion rubles. If the fixed capital in this amount had been introduced into operation, then with a yield on capital equal to 43 kopeks per ruble of fixed production capital, the country's national income would have increased by 3.2 billion rubles for 1982. Reducing the construction time to 2/3 or 1/2 would have made it possible to more than halve unfinished construction, or to reduce it by 50 billion rubles, and to increase the national income by more than 20 billion rubles, or six points per year.

In the plan for 1983 the volume of unfinished construction comprises 90.1 billion rubles, or 73 percent of the capital investments, while the volume of above-norm construction comprise 7 million rubles. This requires that the introduction of production capacities and facilities of residential and social-domestic function be implemented everywhere.

The need for further intensification of building production is caused by a number of reasons. First of all, it is necessary to increase the growth rate of the national income. Secondly, the intensification of building production will make it possible to ensure the creation of production capacities in all sectors of the national economy and to expand the non-productive sphere with smaller material expenditures and in shorter periods of time. Thirdly, the

intensification of building production presupposes an improvement in labor conditions, the growth of productivity, and a reduction in the portion of manual and heavy physical labor in which over half of all workers at construction-installation work sites are engaged. This is of particular significance under the currently existing demographic conditions.

The sequential transition to a primarily intensive means of development of our country's national economy is characteristic for the 80's. In connection with this, the directionality of capital investments is changing. They are being directed primarily toward the reconstruction and technical re-tooling of enterprises. This must lead to an improvement of their structure, which is associated with an increase in the portion of expenditures for equipment and a corresponding reduction in the volume of construction-installation work.

Reconstruction and technical re-tooling of operational production are in many cases more effective than new construction. The growth in production capacities is achieved in a shorter time and with fewer expenditures, the introduction of capacities is mastered more quickly, the demand for work force is reduced, and raw material is economized due to more in-depth processing.

Thus, at the Rustavi Chemical Fiber Plant, the capacity for production of caprone filaments increased by 30,000 tons due to reconstruction. In this case, as compared with new construction at the Barnaul Synthetic Fibers Plant, capital investments per 1,000 tons of fiber were reduced from 2,450,000 to 1,720,000 rubles, construction-installation work -- from 1,600,000 to 540,000 rubles, and the number of workers from 95 to 58 people. The relative share of construction-installation work was reduced from 45 percent to 31.2 percent.

However, we must remember that the effect from reconstruction may be achieved only when there is solution not only of the current problems of developing production, but when the large-scale goals of re-tooling sectors and individual enterprises on the basis of scientific-technical progress are also considered. In practice this is not always achieved. For example, of 452 sites and facilities subject in the 11th Five-Year Period to primary reconstruction and technical re-tooling, only 120 had sufficient substantiation for inclusion into the plan.

The USSR ministries and departments and the union republic Councils of Ministers are presently working out schemes for the development and location of sectors of the national economy and industry. These [schemes] must define the volume (scope) of technical re-tooling and reconstruction and the expansion of existing and construction of new enterprises for the future.

However, the course for reconstruction also does not exclude new construction. Scientific-technical progress cannot be ensured without the construction of new capacities. For example, presently in Eastern Siberia the construction of large enterprises for open-pit mining of Kansk-Achinsk lignite is being expanded. The worker labor productivity at open pits of the Kansko-Achinsk deposit is 25-35 times higher than in the sector as a whole. And this is not only because this coal deposit is unique. The fact is that a progressive mining technology and high unit capacity loading and transport equipment, etc. have been used for its development. Thus, a combination of the extensive and intensive methods of sector development has been found with the leading role belonging to the intensive

means of solving economic problems. The same may be said also of the construction of the Krasnoyarsk Heavy Excavator Plant. We are speaking of the creation of new improved equipment which makes it possible to sharply increase labor productivity in one of the labor intensive sectors -- the coal industry.

The newly created capacities in such sectors as atomic machine building, radio electronics, space technology, the chemical and petrochemical industry and a number of other sectors play an analogous role in the intensification of production, even though these capacities appeared as a result of new construction.

In other words, new production which embodies the achievements of scientific-technical progress is a real means of intensifying the national economy and increasing the effectiveness of social labor.

The need for new construction in our country is also caused by other reasons. Over 80 percent of our country's population lives in the European part of the USSR, where only 20 percent of the fuel and energy resources are located. In the future the fuel-power sectors will develop due to the growth in the extraction of fuel in the eastern rayons of the country. In this case the growth will also compensate for the losses in capacities going out of production in the European part of the USSR. This will require huge capital investments into new construction of petroleum- and gas fields, coal mines and pits, electrical stations, as well as into the development of power consumptive sectors of industry in the eastern rayons of the country.

Furthermore, major hydrological and agricultural construction is being planned in Central Asia and Kazakhstan. Major work lies ahead on the construction of enterprises of various sectors in the BAM [Baykal-Amur Trunk Line] zone, where nine territorial-production complexes are being created. Lands totalling an area of two million square kilometers will be included into the operating turnover here. The development of ferrous and nonferrous metallurgy, coal and chemical industry, production of mineral fertilizers, and others is planned.

The construction of the gigantic railroad line opens access to forest regions of Eastern Siberia and the Far East — areas of logging and lumber processing which have worldwide significance. If the forest areas in the USSR comprise an average of 31 percent, then in the Far East they comprise up to 44 percent, and in the regions of the eastern sector of the BAM -- up to 54 percent. The portion of overmature forests in the eastern zone of the BAM comprises 30 percent of the overall timber reserves, which makes it possible to conduct their intensive procurement.

One of the most important tasks of capital construction in our country is the reduction in the number of simultaneously implemented construction sites and the concentration of capital investments, material and labor resources. This in turn will facilitate the solution of the main problem in the sphere of capital construction — the reduction of construction times and the scheduled introduction of capacities.

It is also important to ensure timely and high-quality development of project estimate documentation. Today in a number of sectors an abnormal situation

has arisen whereby the design decisions become obsolete as a result of long periods of planning and construction, and the estimated cost increases significantly. The projects do not always consider scientific-technical achievements, progressive technology and organization of construction. These and other shortcomings must be corrected. Also, fulfillment must be ensured of the requirements set by the CPSU Central Committee and USSR Council of Ministers which have been presented in the well-known resolution on the further improvement of project-estimate work.

Reducing construction time will make it possible to reduce and even fully eliminate the possibility of obsolescence of projects and the necessity for their review during the period of erecting the enterprises. This will create conditions for improving the planning of capital investments and the more reliable determination of times for the operational introduction of capacities.

It is also rather important to implement such a technical policy in the development of construction work which is directed at improving the technology of building production and is based on the mass application of lightweight building structures, parts and materials with high operational properties, development of production and application of new types of finishing materials, including polymers, synthetic resins, chemical materials, plaster materials, plaster-cardboard and plaster-fiberboards, extruded panels and linings of asbestos cement, lightweight insulators, etc.

Construction management as a whole and the economic management mechanism operating in the sector in particular must provide in full measure the conditions for the systematic increase in its technical level. Improving the organizational structure of management is associated on the one hand with intensification of centralized management of construction of production facilities and structures of national economic significance, and on the other -- with increasing the role and responsibility of local organs for ensuring non-production construction, construction of agricultural facilities and facilities in the meat and dairy and food industry. At the same time, there are plans to simplify the scheme of construction management, reduce stages of work links, bring order to specialization, liquidate parallelism in the work of organizations in various departments, and strengthen and enlarge the organizations of the basic cost accounting link in building production — the construction-installation trusts.

All this will facilitate the further increase in the effectiveness of capital investments and all of social production, the growth of labor productivity, and fuller satisfaction of man's needs in a socialist society.

12322
CSO: 1820/46

INVESTMENT, PRICES, BUDGET AND FINANCE

GOSPLAN OFFICIAL CAUTIONS AGAINST FIXED CAPITAL DISPERSION

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 11, Nov 83 pp 47-53

[Article by R. Tikidzhiyev, department head at TsENII of RSFSR Gosplan, candidate of economic sciences: "Improving Reproduction of Fixed Capital While Reorganizing the Economic Mechanism"]

[Text] The role of reproduction of fixed capital has significantly increased in the contemporary phase of developed socialism. Fixed capital supports progressive structural improvements in the national economy, stable and balanced expanded reproduction, transition of the national economy to intensive methods, and more rational use of the production potential of the country, republic, and territorial unit. Reproduction of fixed capital is very important in the general reorganization of the economic mechanism being conducted at this time. Its goal is to eliminate the reproduction of fixed capital with dispersion of capital and the systematic violation of construction schedules and diversion of capital to new construction when there are sites and enterprises which have been operating for a long time with incomplete utilization of their projected capacities. CPSU Central Committee General Secretary Yu. V. Andropov spoke of this in his speech at the November 1982 Plenum of the CPSU Central Committee: "We must fight even more resolutely against dispersion of forces and means to a large number of construction projects. Increase the proportion of reconstruction and modernization and decrease the number of new sites."[1]

Methods of planning capacities, capital investment, and fixed capital which take into account opportunities for developing existing enterprises and construction of new ones and insure investment in expansion of production have found the most complete reflection in improving planning and economic stimulation in capital construction. This opens up a new direction of concentration of resources with regard for the technical level of existing production. Developing a new approach to planning existing production and new construction makes it easier to identify potential reserves for growth in capacities at existing enterprises and to realize utilization of these available reserves. As a

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1 "Materialy Plenuma Tsentral'nogo Komiteta KPSS 22 noyabrya 1982 goda" [Materials of the 22 November 1982 Plenum of the CPSU Central Committee], Moscow, Politizdat, 1982, p 16.

result interaction of planning for production of output and capital investment is insured. At the same time labor resources are liberated.

Refining the theory and practice of planning reproduction of fixed capital is an elaboration of the Marxist-Leninist theory of expanded reproduction as applied to the contemporary phase. The process of planning existing production and new construction as a single unit takes into account patterns of circulation of fixed capital and the determining role of scientific-technical progress in it. At the present time optimization of the relationship between savings and renewal of fixed capital in the interests of increasing the efficiency of reproduction of fixed capital plays a crucial role in development of the economic mechanism. The essential thing in planning the work of existing production and new construction is preferential use of capital investment, material-technical resources, and the capacities of construction organizations for technical re-equipping and reconstruction of enterprises and sites. This is especially important inasmuch as the reproductive structure of capital investment and fixed capital is being improved very slowly.

We should identify the causes which are retarding progressive changes in the reproductive structure of capital investment and fixed capital. One of them is the slow rate at which the demands and conditions envisioned by the decree on improving the economic mechanism are being put into effect. Plan balances of production capacities and consolidated plans for technical re-equipping and reconstruction are not as yet in complete accord with the interests of interrelated planning of existing production and new construction. Contrary to existing methodological directives, report balances of production capacities are composed mainly for the limited list of types of output on which reports are submitted to statistical and higher-ranking organs and when developing "passports" [official descriptions] of production associations (enterprises).

Up to the present time no substantial changes in the composition of output that is included in report and plan balances of capacities have occurred in the sectors of industry. In particular, the composition of output included in report and plan balances of production capacities did not change in 1980-1982 for the ministries of textile and local industry, while the planned list of output for the ministry of building materials industry has expanded by just seven items since 1981.

Balances of production capacities in the passports of enterprises in these sectors of industry also contain limited output lists. Therefore, the primary goal is to expand the list of types of output for which plan and report balances must be compiled. It is impossible to correlate plan and report indicators for many points of this list because the output descriptions in the report and plan balances do not coincide. The significant discrepancy in the number of points in them makes it difficult to evaluate the use of production capacities and limits it to only that output for which calculations for the report and planning periods are established. To meet the requirement of interrelated planning of existing production and new construction it is essential that the level of use of production capacities adopted in the plan and the level achieved in fact be maximal.

Analysis shows that of the three sectors of industry examined, indicators of the use of production capacities improved only in RSFSR local industry in 1981. Use of production capacities in the USSR textile industry did not undergo great changes and was basically tied to inadequate deliveries of natural raw materials. For the Ministry of Construction Materials Industry the use of capacities worsened for wall, nonore, and other materials.

Study of the use of production capacities and practices in planning it once again confirms the need to work out corresponding normative indicators. Without them there can be no objective evaluation of the results of fulfilling the indicators of use of capacities and adoption of intensive plans is made more difficult. But preparation of methodological recommendations for working out such norms is being delayed.

There are also shortcomings in planning the use and growth of production capacities. In particular, indicators of the use of production capacities are being understated in the plan and their fulfillment is not reinforced by appropriate measures. As a rule an increase in capacities through technical re-equipping is accompanied by improvement in their use. Nonetheless, the extent and trend of technical re-equipping and reconstruction in all the sectors of industry examined still do not fully promote intensification of reproduction of fixed capital. For example, measures to replace equipment and other forms of technical re-equipping taken by enterprises often do not help improve indicators of the use of capacities. Intensification has not yet become a decisive factor in production growth in these sectors. They obtain a large part of their increase in output through new construction and expansion of enterprises rather than through technical re-equipping and reconstruction of them.

The predominance of extensive reproduction of fixed capital is confirmed by data on the movement and use of fixed capital. The gap between fixed production capital being introduced and that being withdrawn is still significant for RSFSR industry as a whole and for the individual ministries. It was decreased slightly in 1981 by lowering the coefficient of fixed capital introduced into operation while simultaneously stabilizing the coefficient of withdrawal in the RSFSR food industry and raising it for republic ministries as a whole (from 4.2 in 1980 to 4.3 in 1981) and in the RSFSR Ministry of Light Industry (from 1.9 to 2.04). This occurred mainly by increasing the rate of withdrawal of the active part of fixed capital. Nonetheless, adverse ratios between the rate of growth of production of output and average annual fixed capital, the capital-labor ratio, and labor productivity persist in industry, which in the end leads to a reduction in return on capital.

To a certain extent inaccuracy in the definitions of different forms of fixed capital hinder the improvement of the reproductive structure of capital investment and fixed capital. The criteria and conditions taken as the basis of distinction do not adequately consider the characteristic features of reproductive processes in different sectors of industry. Expansion of enterprises with the creation of additional work positions is often done under the guise of reconstruction, or sometimes even re-equipping. The role of reconstruction and technical re-equipping in identifying reserves for growth in labor productivity and increasing the shift index of equipment work is weakened under such

conditions. Therefore, it is necessary to continue work on the theoretical and practical substantiation of different forms of reproduction of fixed capital in order to delineate and use it more precisely in the reproductive process.

The priority of such a form of reproduction of fixed capital as technical re-equipping should be based not only on thorough substantiation, evaluation, and selection of the most efficient directions for re-equipping, but also on comparison of this form of reproduction with others. Technical development of enterprises which envisions expenditures for re-equipping, introduction of new technology, mechanization and automation of production, and measures for social development shows that the degree of substantiation of these measures is secondary to substantiation of the efficiency of other forms of reproduction from the point of view of a comprehensive approach to their evaluation. With limited financial and material resources, enterprises are interested in the divisibility of capital investment, which makes it easier to carry out a large number of measures, although they are inadequately substantiated.

With technical re-equipping estimates are made for individual construction sites or types of work and economic calculations are carried out for the introduction of new technology, whereas for new construction and expansion and reconstruction of enterprises planning-estimate documents are compiled, which makes it possible to give an economic evaluation of these forms of reproduction. The lack of a similar scheme for technical re-equipping measures makes it impossible to compare the efficiency of technical re-equipping with other stages of reproduction of fixed capital.

Insufficient substantiation of different forms of technical re-equipping during the formulation of plans makes it difficult to define the financial and material expenditures which are needed to carry it out. Consequently, to finance the most progressive reproductive processes, above-plan sources must be sought (depreciation deductions directed to capital repair, credit, and others). This hinders interrelated planning of existing production and new construction.

Successful implementation of technical re-equipping and reconstruction measures is often made difficult because contracting construction organizations do not have sufficient capacities for them. Associations (enterprises) are finding the solution to this problem by significantly increasing the volume of construction work done by the in-house method. It is often used even for building large new shops during reconstruction of enterprises. Their construction often exceeds normative schedules by two or more times. In the final analysis capital is dispersed, schedules for carrying out progressive measures are prolonged, and their efficiency is reduced.

The introduction of new equipment into operation is an important factor in improving the reproductive structure of capital investment. The ratio that has become established in the composition and structure of equipment being installed in recent years is impeding progressive changes in their reproductive structure; this means the ratio between equipment which is going into replacement during technical re-equipping and reconstruction and equipment savings with new construction and expansion of enterprises. The savings of production capacities

is achieved primarily through quantitative expansion of the stock of equipment with inadequate replacement of obsolete and wornout equipment.

Despite the great importance of renewing equipment during technical re-equipping of production, it does not always help raise its organizational-technical level. This is related to the quantity and quality of equipment being put into operation to replace the equipment that is being withdrawn. Equipment which does not conform to the "latest word" in technology is often used during reconstruction and technical re-equipping; this is illustrated by the lower cost of a unit of equipment directed to replace equipment being withdrawn as compared to the cost of a unit of equipment being used at newly built and expanded enterprises.

Until recently new construction and expansion of enterprises have received preference in the distribution of new equipment. As far as reconstruction and, especially, technical re-equipping are concerned, these forms of reproduction of fixed capital are supplied with new equipment much less adequately. In such conditions the upgrading of production at existing enterprises to a contemporary level is retarded, it becomes more complex to plan optimal growth and utilization of capacities, work to raise the quality of output and improve the use of production equipment and areas is more difficult, and the efficiency of reproduction of fixed capital is reduced. In addition, the limitations and inadequately progressive character of the equipment being allocated leads to corresponding goals and methods of renewing equipment. The main goal of selective replacement of equipment remains elimination of physical wear rather than obsolescence.

Improvement in planned management of the reproductive structure of fixed capital is also necessitated by the need to balance production capacities and fixed capital with labor resources. Planning capital investment in existing production and new construction as an integrated whole presumes the establishment of such relationships between the processes of renewal and accumulation of fixed capital as will insure maximum utilization of existing capacities and fixed capital which is being created anew during its expansion and new construction.

The low proportion of reconstruction and its continuing reduction, which is observed in many ministries, restrict growth in the technical level of existing production and utilization of capacities, preserve the lack of coordination and bottlenecks in its elements, and do not help improve the conditions of labor and daily life of working people, thus leading to greater labor turnover. As a result the imbalance between calculated capacity and the number of working people increases. But labor resources are essential for work at new and expanded enterprises. Given the demographic situation which has taken shape, full staffing of the work positions being newly created is possible by liberating working people at existing enterprises. Since requirements for labor resources are not being satisfied at these enterprises either, new enterprises work with a shortage of working cadres. This reduces the efficiency of introduction of new equipment. The results of the imbalance between fixed capital and labor resources are significant losses from underproduction of gross output and lower rates of incorporation of projected labor productivity and return on capital at newly operating and expanded enterprises and sites.

The decisions of the 26th CPSU Congress lay out steps to eliminate the imbalance of existing work positions and those being created with labor resources which survives in industry and other sectors of the economy. For their success it is important to eliminate the factors that are responsible for the development of this disproportion. Therefore, we should examine the role and place given in planning calculation to the indicator which characterizes conditional liberation of numbers of workers.

On the basis of records of the amount of relative liberation of numbers of industrial production personnel calculated by factors of growth in labor productivity, annual and five-year planning use the method of substantiating the additional need for labor force at industrial enterprises and construction organizations. But it does not insure full utilization of the achievements of scientific-technical progress. The amount of relative liberation does not coincide with the absolute figure. This is explained by the fact that, in the first place, increasing production output through technical re-equipping or reconstruction is not accompanied by a reduction in the number of work positions throughout all production and all categories of working people. Secondly, if liberation actually occurs, then it goes chiefly to cover the shortage of personnel at the particular enterprise. In the third place, people with other professions, specializations, and qualifications are often needed to fill the work positions.

The size of relative liberation of personnel as a result of increasing production output where there is a relatively small number of working people does not satisfy the actual requirements of production for personnel and, consequently, does not guarantee full staffing of not only new but even existing work positions when there is a shortage of employees. Neither are measures developed by ministries to increase labor productivity and raise the technical level of production oriented to satisfying the actual requirement for personnel, since they are also aimed at relative liberation of personnel. Thus, the indicators of technical progress adopted in sectorial plans are understated, which is one of the causes of the imbalance between work positions and labor resources.

When using the indicator of relative liberation of working people in calculations, such sections of the plan of economic and social development as planning capacities, fixed capital, and labor productivity are not coordinated among themselves. To avoid this, when substantiating an increase in the number of work positions and number of personnel we should calculate the absolute liberation of the latter resulting from rise in labor productivity. This indicator should be introduced in existing report and planning forms.

Thus, to increase the efficiency of reproduction of fixed capital it is essential to improve the management and planning of both the reproductive process as a whole and of its individual stages (design, construction, and incorporation of capacities) and individual forms of the reproductive process, especially technical re-equipping and reconstruction. Although the scale of renewing fixed capital has grown in recent years, its rate is still low. This is explained by the fact that the importance of technical re-equipping and reconstruction as the most progressive forms of reproduction of fixed capital has

been underestimated in planning. The processes of technical re-equipping and reconstruction of production are basically directed to expansion rather than to improving existing production: eliminating bottlenecks, increasing the shift coefficient and level of use of capacities, and reducing the number of work positions in primary and service shops.

When there is inadequate substantiation of different forms of technical re-equipping in the design phase, it becomes difficult to determine the full consequences of re-equipping and the amount of financial and material-technical resources needed to conduct the corresponding measures. This reduces the efficiency of not only this form of reproduction of fixed capital, but also of reconstruction and expansion, with which technical re-equipping coincides in time. Unfortunately, even the new formulations for automating planning calculations during development of the capital construction plan do not take account of the principle of integrated planning of existing production and new construction. Interrelated planning of existing production and new construction will make it possible to shape a progressive structure of capital investment, concentrate it, and resist the inertia-bound approach to inflating the volume of new construction. At the present time the avoidance of technical re-equipping and reconstruction by general and specialized construction organizations leads to an artificial increase in the volume of new construction and expansion of enterprises and impedes concentration of capital investment.

Analysis of the results of applying the principles of the new economic mechanism in the area of planning production capacities, fixed capital, and capital investment, even though it has not been in operation a long time, permits us to draw certain conclusions and formulate a number of suggestions.

In order to more fully implement the principle of planning existing production and new construction as an integrated whole, it is necessary to bring methods of planning production capacities into line with the requirement of interrelated planning of existing production and new construction. Related to this we should do the following:

-- improve practices in determining production capacity while insuring its optimum size; the calculation of capacity should be based on the projected and planned list of output produced;

-- compile balances for the use of existing production capacities for the entire list of output produced and work out plan balances for the entire output list of the report balance.

-- develop and introduce into planning practice scientifically substantiated norms for use of production capacities.

Planning and stimulation of reconstruction and technical re-equipping should be improved through: introduction of a preferential procedure of allocating financial, material, and other resources for reconstruction and technical re-equipping; restriction of the procedure of allocating resources for reconstruction involving an increase in the number of work positions; creation of specialized contracting construction organizations for reconstruction and technical re-equipping.

The principle of unity of planning for existing production and new construction should be expanded to the design phase, assigning the design organization the following duties:

— determine the order of performance at the level of the enterprise and the sector for technical re-equipping, reconstruction, expansion, and new construction (and when necessary, their integration in time) and establish the efficiency of each form of reproduction of fixed capital and the sequence adopted for its realization; the order of use of the forms of reproduction of fixed capital is conditioned on the state of existing production potential, the level of scientific-technical progress, and change in the demographic situation;

-- develop an independent scheme for: the whole complex of technical re-equipping, giving preference to measures for improving production which insure improved utilization of the existing potential of capacities, fixed capital, and labor resources; reduced numbers of work positions; and a higher shift coefficient of equipment use and a higher level of use of capacities;

-- include measures for technical re-equipping in technical-economic substantiation of reconstruction or expansion when it is necessary to integrate these forms of reproduction.

12,424
CSO: 1820/33

ENTERPRISE RENOVATION, RETOOLING PRACTICE FAULTED

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 11, Nov 83 pp 115-117

[Article by V. Urchukin, director of VNIImekhchermet (Dnepropetrovsk): "Technical Retooling of Industrial Enterprises"]

[Text] The Guidelines on Drafting Plans for the Economic and Social Development of the USSR outline the methodology for planning the reproductive structure of capital investments and define their directions: new construction, expansion, reconstruction, and technical retooling of enterprises. However, in practice not only are these concepts variously interpreted, but new construction is frequently performed under the guise of reconstruction or technical retooling of enterprises.

Owing to the imprecision of such differentiation, the same kind of work is classified under the heading of different categories of capital investments at different plants. In ferrous metallurgy, for example, under the Ninth and Tenth Five-Year Plans new shops were frequently built instead of rebuilding and expanding existing enterprises. The share of construction and installation work in the cost of reconstruction was 59.5 percent; in new construction -- 59.35 percent. The result is that it becomes more difficult to plan capital investments and that their actual distribution in the structure of reproduction is distorted.

One of the significant shortcomings of the methodology of planning the reproductive structure of capital investments is the absence of a connection with the actual utilization of capacities, the dynamics of the reliability of their functioning and repair and operating costs. The Objects of planning of the utilization of capacities in the branch are: basic production aggregates, closed production cycles with due regard to age structure, periodicity and duration of capital repairs, the cost of capital repairs, equipment idle time during preventive maintenance, and standard service life. Capacity utilization indicators are considered in the establishment of production targets, but are not taken into account in the process of allocating the necessary capital investments for the technical retooling of production. The enterprise passport, which has been instituted as official state document, must become the basis for planning the utilization of production capacities, for determining capital outlays on the renovation of production equipment.

But the varying structure of the latter, both in terms of age and unit power, does not permit the accurate evaluation of change, the volume of capital investment and the optimal time for technical retooling.

In order to determine the impact of every component of the reproductive structure of capital investments on the effectiveness of utilization of fixed productive capital, we shall analyze the "technical retooling of enterprises" and its interrelationship with other categories of capital investment. Since the production capacity is the aggregate of various kinds of fixed capital (buildings, structures, transmission mechanisms, machinery, and equipment), in order to determine the full cycle of operation of an aggregate it is necessary to compare the standard service life of all elements of capital based on amortization norms for renovation and forecast norms of obsolescence of the active part of capital. In metallurgy, the aggregate may take the form of a blast furnace, a converter, a slabbing mill, a blooming mill, a rolling mill, i. e., a complex of interconnected equipment that produces the finished product of a separate production stage; in machine building, it takes the form of a closed production cycle.

Existing amortization norms for renovation are established for each element of fixed productive capital based on the theoretical premise of their separate functioning without rigid interrelationships between them. Such an approach to the determination of the service life of structurally different capital and amortization norms for renovation theoretically excluded the existence of technical retooling as a form of reproduction of fixed production capacities. However, in practice, a capacity--especially in branches with continuous production--is an intricate interconnected complex of various kinds of equipment and buildings. Thus, capacities for the production of sinter cake constitute an aggregate of fixed productive capital with varying service life. Analysis of indicators of reliability of the operation of sintering machines at metallurgical plants ("Krivorozhstal'," "Azovstal'," the Metallurgical Plant imeni F. E. Dzerzhinskii, Metallurgical Plant imeni Makeyevskiy, Metallurgical Plant imeni Yenakiyevskiy, and "Zaporozhstal'" for more than a 25-year period of operation compared with the cost of repairing them attests to an annual increase in the latter by 4-6 percent and the need for the periodic replacement of individual types of equipment.

When aggregates are operated beyond their normative service life without technical retooling, the reliability of the work is diminished and output declines. The structure of sinter cake production capacities predetermines the technical retooling of working equipment most exposed to physical wear. The expediency of repairing such equipment is limited by rising repair costs and the declining reliability of this equipment in operation. What is more, the renovation of equipment at a new technical level is necessitated by higher environmental protection requirements, by scientific and technical progress in metallurgical machine building and by the development of progressive production processes.

In the process of examining the structure of capacities for producing pig iron, converter steel and rolled metals, it is important to consider the complexity and multicomponent character of the metallurgical aggregate and the equipment complex, the effect of the obsolescence of which

is selective owing to the lack of uniformity of scientific and technical progress in machine building. For example, the blast furnace is continuously influenced by scientific and technical progress if we think of the manufacture of new production equipment in the form of the elements that comprise the furnace and the introduction of new production processes (the injection of oxygen or natural gas into the furnace, high-temperature blasting, the drying of the injected air). At the same time, bottlenecks to the more effective operation of the blast furnace develop on the one hand, while the economically feasible service life of the furnace is extended beyond the limits of its normal wearout time on the other.

Technical retooling, as a form of reproduction of individual components of the active part of fixed productive capital, is supposed to eliminate bottlenecks in the operation of complex, multicomponent equipment and to promote the introduction of progressive production processes and the incorporation of new equipment in the aggregates that are in operation. The effectiveness of reproduction of capacities as a result of technical retooling depends on the compatibility of existing buildings, structures and transmission mechanisms with the new production processes and equipment and on whether they are sufficiently reliable in operation. The physical depreciation and obsolescence of buildings and structures and their incompatibility with high-efficiency production processes and equipment presupposes the existence of a limit to the economic feasibility of technical retooling and to the degree to which existing enterprises can be expanded (including their total reconstruction).

In accordance with an official letter of instruction issued by USSR Gosplan and USSR Gosstroy on 6 February 1975, the reproductive structure of capital investments includes the maintenance of existing capacities, the technical retooling of production, and the reconstruction and expansion [of existing enterprises] and construction of new enterprises. Some economists propose that reconstruction be classified as small-scale, medium and total. This proposal stems from the content of the works referred to in the letter of instruction. Its practical effect would be to link small-scale and medium reconstruction with technical retooling and to connect total reconstruction with the expansion of an enterprise. This would make it possible to examine the reproductive structure of capital investments in two different aspects: new construction, expansion and total reconstruction of enterprises--a form (with varying degrees of combination of) extensive and intensive expanded reproduction; and the maintenance of existing capacities, the technical retooling of enterprises, and small-scale and medium reconstruction--a form of simple and expanded reproduction which precludes increases in the size of the work force and restricts increases in production area.

Such a differentiation makes it possible to identify (within the reproductive structure of capital investments) new construction of enterprises (including those that are built to replace enterprises razed due to physical depreciation or obsolescence); the expansion of production, including the construction of shops to replace shops torn down for the same reason; and technical retooling. The proposed structure excludes different interpretations of the directions of capital investment and gives the enterprises broader powers to resolve technical

retooling questions. In particular, it would allot a specific share of amortization for renovation and impose limits on capital outlays. With the activation of plans for the development and location of the branch's productive forces, the enterprises' tasks for the next 15-20 years are clearly articulated. They specifically call for the improvement of the enterprises both through expansion and through technical retooling.

The differentiation of the reproductive structure of capital investments agrees both with theoretical conclusions regarding the need for the periodic renovation of existing capacities and the limits to the economic feasibility of technical retooling and with the economic mechanism for increasing the effectiveness of the use of existing capital not so much in the direction of expanding the scale of production as of improving the quality of production and lowering the material-, labor-, and resource-intensiveness of production. What is more,in capital investment planning, the proposed reproductive structure of capital investments will make it possible to simplify the financing of technical retooling on the one hand and to intensify the monitoring of plans for the development and distribution of the productive forces of branches and regions and at every construction project starting with the preplanning stage.

Prerequisites are thereby created for accelerating the technical retooling of existing enterprises, for combining retooling with the planned capital repair of aggregates on a new technical basis since organs of USSR Gossnab guarantee the delivery of equipment, cable and conduit products and other material and technical resources secured by capital investments. Financing in such cases is supplied from two sources: capital investments in the actual renovation of aggregates and capital repair funds that are earmarked for raising the level of reliability of other equipment belonging to the aggregate.

As a result of the dramatic reduction in the number of new construction projects, in new construction it is now possible for USSR Gosplan to plan and manage each project starting with the preplanning stage, with the design, financing and allocation of resources with the aim of increasing the effectiveness of construction output and of reducing the time it takes to create new capacities. Under such conditions, one of the principal tasks of branches and existing enterprises is to determine the amount of capital investment required for the technical retooling of aggregates and economically substantiated deadlines for renovating the latter.

In the process of improving the existing statute on the enterprise passport, it is expedient to consider the totality of closed production cycles and individual aggregates, their service life, the technical level and dynamics of repair and operating costs, resource consumption indicators, and ecological factors. This will make it possible to plan capital investments for the technical retooling of each aggregate, enterprises and branch based on a uniform system for planning the use of aggregate capacity, which would simultaneously improve the quality of production plans. The economically feasible time for technical retooling is determined by the dynamics of rising repair costs and lowering profits due to the diminished operating reliability of the aggregate.

The drafting and implementation of plans for the technical retooling of existing enterprises can only be carried out on the basis of amortization allowances for renovation that are left at the disposal of the branches and by using their resources for capital repair.

5013
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ECONOMIST URGES PRODUCTION CAPACITY MAXIMIZATION

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 12, Dec 83 pp 99-103

[Article by Doctor of Economic Sciences, Prof M. Slizhis from Leningrad: "An Optimum Load on Production Capacity"]

[Text] One of the urgent tasks set by the 26th CPSU Congress and the subsequent plenums of the party Central Committee in the area of improving management and increasing the management level in all the economic units has been the fuller consideration of internal production reserves in the plans and the choosing of effective ways to achieve high national economic results. Here an important role has been given to disclosing and considering the reserve of production capacity at industrial enterprises.

For continuous production the setting of this is not difficult but as for non-continuous and primarily in machine building and metalworking which are marked by a broad product range and a frequent change in it, here the given problem has not been solved. One of the reasons for such a situation lies in the established definition for the concept of production capacity and the methods employed to calculate this. At one time, these were justified and brought about great benefit in improving the planning of product output, however under present-day conditions these do not meet the increased demands on production planning or for the balancing of material and labor resources.

The "Basic Provisions for Calculating Production Capacity" point out that by production capacity at an industrial enterprise or association (combine) one understands the maximum annual (daily or shift) product output or the volume of output and processing of raw materials in the range and assortment for the report year corresponding to the actual output for the plan period as envisaged by the plan with the full use of the production equipment and production areas. For enterprises with a discrete production process where the basic shops operate on two shifts (or less than two shifts), it is recommended that capacity be calculated proceeding from two-shift operations and for specially-made and scarce equipment, from three-shift conditions.

These two most important principles of the product range and the equipment operating conditions, as employed in the calculation, largely predetermine the quantitative assessment of production capacity. Such an assessment makes it

possible to carry out the technical and economic feasibility studies for the industrial production plan and to choose the most effective channeling of capital investments, to detect and eliminate production bottlenecks, to establish the demand for additional equipment, its surpluses and so forth. However, the current definition of production capacity and certain procedural provisions for calculating it in essence are aimed at solving just one problem, that is, coordinating the product output plan with the production capacity in the available fleet of production equipment.

In our opinion, attention should be given to the proposal made by a number of economists to leave in the definition of the concept of production capacity at enterprises the words "maximum possible annual product output" and remove "daily or shift." Only the annual product output, in reflecting all the production and organizational interruptions in production, can describe capacity.

Of course, in a number of instances the daily or shift product output is essential as a calculation value of capacity but not as a description of this. The use of the given indicators leads to an exaggerating of the achieved results for the equipment load factor, as it does not consider such an important production reserve as improving its utilization during the calendar year.

Maintaining the product range and assortment established in the plan in calculating capacity does not take into account the very dynamic changes in product assortment over the long run and this, in turn, does not make it possible to fully employ the available fleet of equipment over time. For example, at machine building enterprises this leads to significant deviations from its real amount and only to a smaller amount (due to differences in the labor intensity structure of the manufactured product). As a result, the reserves of production capacity are not fully disclosed.

From our viewpoint, capacity must describe the economic potential of the fixed productive capital at a socialist enterprise for producing the socially necessary product as determined by the planned organization of production on the social scale. The expression of this is the maximum possible production volume of aggregate social product in proportions meeting the requirements of society.

Proceeding from this it can be assumed that the product range and assortment set in the annual production plans to a certain degree conform to the needs of society while the five-year plans and those for a longer period reflect the changes in them also corresponding to these demands. Then the following definition can be given. An expression of production capacity at an industrial enterprise or production association (combine) is the maximum possible annual output of product or the volume of the extraction and processing of raw materials within the limits of the national economic demand. The lower limit for the latter is the range and amount of products according to the plan (report) while the upper limit is the long-range demand for this product.

The production and technological equipment is a resource limiting the enterprise's capacity. For example, at machine building plants, out of all the production equipment, just 15-30 percent can limit capacity, that is, restrict the enterprise's production capabilities with a set product range. The remaining portion does not influence the amount of product and is nonlimiting with any

production plan out of the established product range. For the limiting equipment it is essential to work out variations of the production processes which would make it possible to determine the optimum amount and fullest load on the production capacity. The ascertaining of the limiting equipment makes it possible to broaden the aggregating of articles in multiproduct production. The reduction of them to one or several product types can be carried out without reducing the accuracy of the calculations in identifying the labor intensiveness of the articles not for the entire groups of equipment and work areas but merely for the limiting ones.

In calculating production capacity the employment of mixed operating conditions for the equipment (two- or three-shift), as a rule, leads to the understating of its amount and to a subjective approach. Let us illustrate this from the following example. Let us assume that a machine building plant where the basic shops operate on two shifts has determined its production capacity (in percent of the plan) as equaling 103.2 percent. For this a portion of the equipment must be converted to three-shift operation. The lathes, turret lathes and boring machines are the leading ones. The proportional amount of labor intensiveness in the programs responsible for these groups of machine tools equals 59.4 percent and in terms of number they are 44 percent of the available fleet. The calculation has been made in accord with the procedural instructions and meets the demand of coordinating the product production plan with the production capacity. However, with three-shift operation of all the equipment, the production capacity would be 143.7 percent. And any amount within the limits of 103.2-143.7 percent would be sound and correspond to the current procedural provisions but would depend upon a subjective approach to the calculations. Let us assume that there is also a plant with the same equipment and produced product but its production program, for example, is 30-40 percent greater than at the given enterprise. Obviously, its production capacity calculated according to the current instructions will be higher than at the designated plant, although objectively they are the same.

In the calculations one can permit the use of different operating conditions such as two- or three-shift (three-shift is preferable), but without fail there must be one for all the equipment of a specific enterprise. Otherwise the amount of the production capacity will depend upon the tautness of the plan and the objectivity of the enterprise employees in calculating it.

The use of the given operating conditions does not exclude the use of the calendar time fund in the calculations (minus the time on equipment repairs) for characterizing the economic potential of the fixed productive capital to produce the product needed by the national economy, that is, the production capacity. In the aim of delimiting these categories for enterprises with a continuous process and a seasonal type of production, it would be advisable to introduce the concept of "production capacity according to operating conditions." In determining this, in addition to the calculations, proceeding from the calendar time fund for the equipment load factor, it is also essential to consider the seasonal nature of production and the established conditions (shift factor) for the operation of the units and machines (uniform for the enterprises or group of enterprises). Calculating the uniform conditions is also essential for disclosing disproportions in individual types of production and subunits at enterprises, in associations and in the sector as a whole.

The introduction of the concept of "production capacity according to operating conditions" will help in objectively assessing the existing reserves of production capacity as well as to solve such questions as the choice for channeling capital investments, determining the possibility and necessity of carrying out the technical reequipping of operating enterprises and so forth. Naturally, production capacity according to operating conditions can actually be surpassed.

The use of mathematical economics methods and computers in determining production capacity according to the procedure approved by the Ministry of the Electrical Engineering Industry at the plants of this sector has shown the following. With the same initial data (product range, labor intensiveness of its manufacturing and equipment operating time funds) the amount of production capacity according to operating conditions exceeds the calculated by 5-20 percent and in individual instances even more.

In principle agreeing with the statement of Ye. A. Ivanov on the shortcomings of the value measurements of capacity,[1] we would point out that their influence can be reduced by incorporating lower and upper limits. As the calculations showed, without this the production capacity according to operating conditions, in determining it by the method of optimum planning, significantly increases while the product range characterizing the capacity changes sharply and is (in percent of the plan) 25.9-50 percent in terms of the number of types and 28.5-75.8 in monetary terms. For this reason, it is impossible to calculate production capacity according to operating conditions using this method.

Characteristic of this is the calculation for one of the complete-product shops at the Leningrad Carburator-Armature Plant imeni V. V. Kuybyshev. In maintaining the planned product assortment, the production capacity of the shops was 102.2 percent of the plan. In solving the same problem for an optimization model with the same initial data but with introducing a limitation on the long-range demand for the product, this rose up to 131.4 percent of the plan. For individual spare parts the production capacities were even higher. Naturally, these capacities could be realized only by increasing the number of personnel. In principle the impact of the individual factors on the amount of production capacity employed in the production capacity balance can be objectively and more dependably determined.

The importance of realizing the optimization tasks in production planning was pointed out in the decision of the USSR Gosplan even in 1977.[2] The given example and analogous calculations for many other plants confirm such advisability in determining the production capacity of operating enterprises with an interrupted production process.

Capacity according to operating conditions in a number of instances is a portion of the production capacity (for enterprises with an interrupted production process). This can serve as an indicator making it possible to correlate the product output quota with the real (and not the potential) abilities of the enterprises. But its isolating as a portion of the whole in calculating the indicator and employing it in the planning system would lead to certain theoretical and procedural contradictions. For example, the Instructions on Making a Simultaneous Reckoning and Compiling Production Capacity Balances at Operating Industrial Enterprises state that the capacity utilization level should not

exceed 100 percent. Actually this maximum can often be surpassed as a result of changing the operating hours of the enterprises.

The Methodological Instructions on Working Out the State Plans for USSR Economic and Social Development, for determining possible product output at enterprises which have reached their designed capacity, have adopted a capacity use factor of 98-99.8, without any reference to what industrial sector this applies. Thus, the possibility is permitted of a 100-percent load factor on the capacity according to operating conditions for all industrial sectors and this theoretically is incorrect. The focusing on this would encourage the enterprises at machine building enterprises to make the calculation in such a manner that the true production capabilities are not disclosed. At the same time a low shift factor for operating the equipment at certain machine building enterprises shows unused reserves for producing products.

The abandoning of the indicator of production capacity according to operating conditions requires the revising of customary, established views and approaches to the concept of "production capacity" both by the planning bodies and the enterprises. It has become customary to feel that the capacity according to operating conditions is 90-95 percent and more utilized by the enterprises with a discrete type of production, including machine building ones. But in a number of instances with double-shift operating conditions for the equipment (accepted in the calculation) the load factor is 40 percent and less and this is not always economically justified. Obviously, it would be advisable to set a norm for the use of production capacity depending upon the adopted operating conditions at the enterprises. For example, with a 5-day work week and three-shift operation it would equal 0.71 and with two-shift 0.47 of the amount of the production capacity, as an economic potential of the fixed productive capital (total and for each article).

Such norms with the established operating conditions at the enterprise could be accepted as 100 percent. Then it would be simple to recalculate the production capacity according to operating conditions for ascertaining the production capacity as economic potential. It would merely be a question of dividing its amount by the norm corresponding to the actually established operating conditions at the enterprise (for example, by 0.71 or 0.47). However, it is impossible to do this in accord with the current procedures; a complete recalculation of production capacity must be carried out.

An advantage of the category "production capacity" in comparison with its amount according to operating conditions is that this provides an opportunity to qualitatively assess the real reserves for product output. This is very important in settling the question of building new enterprises and expanding existing ones.

In determining the capacity according to operating conditions for various equipment, sections, shops and production lines, various operating conditions are employed (there are nine of them in machine building). Such an approach does not make it possible to establish the mismatching of the potentials of the equipment, sections and shops. But in determining production capacity from the maximum time fund which should be employed, the mismatching can be accurately established. The actual operating conditions of the enterprise are established in planning capacity utilization.

As is known, the ties between the means of labor and the labor force depend upon the nature of the production process. In continuous production, labor ensures the continuity of the production process over a certain period; in discrete production the period and time of employing the means of labor during the day and the use of labor can change. In the first of these a definite minimum number of personnel is envisaged. In the latter this can be less than is necessary for employing enterprise capacity but then the latter will depend upon the planned number of personnel. For this reason, the capacity load factor with discrete types of production can change broadly, depending upon the planned number of operating personnel. The improved utilization of production capacity is determined by the following factors:

1) By a rise in the technical level of production;

2) By improved management and organization of production and labor, by reducing time losses in the use of equipment and by eliminating unproductive work;

3) By increasing the shift factor for the operation of machines and units due to additional manpower, including also internal reserves.

The third factor is not taken into account by the procedural instructions, although for enterprises with a discrete type of production, this frequently plays a crucial role in improving capacity utilization and the fixed capital as a whole. In planning the capacity load factor at enterprises with discrete production, it is essential to isolate that portion of the possible increase in product output which can be obtained by increasing the total number of industrial-production personnel for increasing the shift factor of equipment operation.

The effectiveness of social production depends upon the use of labor and material resources and, in particular, the fixed productive capital. Here an important role is played by the material incentive system. The most difficult to determine are the indicators on which the given system is based. These should reflect the efforts and quality of the work carried out by the production collectives as a whole and by individuals in the area of increasing production efficiency.

The employment of the profitability indicator in the current material incentive system, even considering the introduction of the payment for productive capital, has not produced the expected results in the area of the utilization of capacity by the enterprises. The procedural instructions on working out the USSR state plans for economic and social development have established the necessity of a material incentive for enterprise collectives to utilize production capacity. But the tautness of the plan according to the equipment load factor should be assessed on a differentiated basis, even under the condition that the latter has been precisely determined. In our view, in planning and working out the incentive systems, this coefficient should be set apart, bearing in mind the improved utilization of production capacity by carrying out organizational-technical measures and due to increasing the number of employees. The former depends completely upon the activities of the enterprise collectives and the latter to a greater degree upon the central management bodies.

The purpose of the given factor is to encourage the enterprises to more fully utilize production capacity. But the calculation of capacity (particularly in terms of operating conditions) depends upon the approach which can be nonobjective, for in the given instance the enterprises will be interested in understating it even more than before introducing an assessment of plan tautness for such an indicator. Obviously this can run counter to the material interest of the workers in increasing the production capacity of operating enterprises.

The practices of material incentives have shown that the greatest effect is achieved in employing specific-type bonus systems. A bonus for the fulfillment of the basic technical and economic indicators very often depends upon many conditions. The personal involvement of the individual worker in achieving the overall results is virtually impossible to assess and often it is a consequence of a moral responsibility and not a material interest.

A specific-type bonus system presupposes a small number of indicators (in a number of instances just one) and a precisely limited range of persons who are to be encouraged. An example of such a bonus is an incentive for rationalization proposals and inventions, for the saving of electric power and so forth. The bonus is paid from the savings obtained in the national economy.

In our opinion, these types of incentives should be supplemented by a bonus for an increase in production capacity at operating enterprises due to their technical reequipping (without an expansion of the production area) and a range of other measures (the introduction of new equipment and production methods, the mechanization and automation of production processes, modernization and replacement of obsolete and technically worn out equipment, and improving the organization and structure of production). The bonuses should be paid considering the following. The enterprises are given a norm for the annual increase in production capacity due to organizational and technical measures on a level of the average norm for the previous 5 years; for the last year the increase in production capacity above the norm is calculated and not counting its increase as a result of the change in the product range; the savings for the year is determined from the amount of the increase in production capacity.

The latter is achieved due to the savings in:

1) The conditionally fixed portion of expenditures at the given enterprise;

2) Capital investments going into the construction of new enterprises the necessity of which is eliminated with the increased product output at the operating enterprise;

3) For the consumer of the product as a result of employing it sooner.

The effect from the increase in production capacity is determined according to the formula of calculated expenditures. The bonus can be paid out within the savings of wages at the manufacturing enterprises and the consumers of the product (in terms of the structure of expenditures for the conditionally fixed outlays of the manufacturing plant and for the structure of all plant expenditures for the consumer of the product) and for the construction organization (according to the estimates of analogous types of construction). A portion of

the savings in capital investments can be channeled into the production development fund and, when necessary, into the fund for sociocultural measures and housing construction. A portion of the bonus is paid out at the end of the report year and the remainder after the increase in production capacity if this has been achieved in the subsequent 2 or 3 years. The list of enterprises to which a bonus is paid for increased capacity is established by the ministry. The increase in production capacity at the enterprises and the norms for its annual increase due to organizational and technical measures can be calculated on a centralized basis employing the sectorial scientific research institutes on the basis of initial data from the enterprises and supervised by the USSR Gosplan. Bonuses for increasing production capacity should be paid to the ministerial staff along with the workers of enterprises (production associations).

Bonuses for industrial workers for increasing the capacity of operating enterprises will help to accelerate the introduction of scientific and technical achievements and advanced experience into production and to more rationally utilize the capital investments.

FOOTNOTES

[1] See Ye. Ivanov, "Production Capacity: Problems and Judgments," PLANOVOYE KHOZYAYSTVO, No 2, 1982.

[2] See: "In the USSR Gosplan," PLANOVOYE KHOZYAYSTVO, No 11, 1977.

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IMPROVEMENT IN REGIONAL PLANNING, ANALYSIS SOUGHT

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 12, Dec 83 pp 79-83

[Article by S. Divilov: "The Problem of Improving Planning and the Evaluation of Fulfillment of the Regional Plan"]

[Text] The November (1982) Plenum of the CPSU Central Committee emphasized that measures to accelerate increases in the effectiveness of social production are still being implemented too slowly. In his address at the November (1982) Plenum, Yu. V. Andropov, general secretary of the CPSU Central Committee, observed: "The most important thing is to speed up the effort to improve the entire sphere of economic leadership--management, planning and the economic mechanism."[1] As is known, decree No 695 of the CPSU and USSR Council of Ministers dated 12 July 1979 contained a complex of measures designed to increase the effectiveness of production, to improve the quality of the work and to attain high final national economic results. Particular attention was focused on raising the role of state plans, especially five-year plans.

In June 1980, USSR Gosplan and the USSR Central Statistical Administration adopted guidelines for evaluating the fulfillment of five-year plan targets at all levels of economic management in an ascending total from the beginning of the five-year plan or in the case of the one-year plan, in an ascending total from the beginning of the year.[2] They articulated the procedure for evaluating plan fulfillment by enterprises, associations and ministries, but did not clearly describe the procedure for evaluating the fulfillment of the plan by union republics, krays, oblasts and rayons. The guidelines stated in particular that the following are taken as targets in five-year and one-year plans:

--for union republics: indicators of state plans for the economic and social development of the USSR and indicators of state plans for the economic and social development of union republics;

--for autonomous republics, territories and oblasts: indicators (established by the councils of ministers of the respective union republics) of plans for economic and social development and indicators of plans for economic and social development ratified by sessions of ispolkoms of Soviets of People's Deputies and Supreme Soviets of autonomous republics.

As is known, the state plan for the economic and social development of the USSR assigns plan targets to union republics: in toto--for the economy of republic subordination; basic industrial production and capital construction targets--for industrial and construction ministries of union-republic subordination; for the production of certain top-priority products--for enterprises of union subordination situated within their boundaries. However on the basis of these data, it is extremely difficult to draft an integral five-year (or one-year) plan for the economic and social development of a union republic that would ensure the proportional, comprehensive and reciprocally coordinated development of its branches.

Union ministries and departments are remiss in communicating the extremely limited number of indicators to republic agencies pertaining to organizations and enterprises subordinate to these agencies even though the list of these indicators has been firmly established by USSR. The targets communicated in the process for the most part pertain to the volume of industrial production and capital construction. It not infrequently happens that the sum of targets conveyed by a main administration or association to its enterprises differs substantially from the data communicated to republic agencies by a union ministry.

Republic gosplans have very limited regional data at the time when the republic's plan for the coming year is ratified and this makes it difficult for them to make a preliminary estimate of the key indicators (growth rate of industrial output, capital investment, labor productivity, etc.). The result is that the plan targets received from union ministries and agencies are frequently not backed by actual resources.

According to the established procedure, 2 or 3 months after the one-year plan has been ratified on the basis of the assembled data, republic gosplans compile indicators of the comprehensive development of the republic for the coming year and submit a document containing these indicators to USSR Gosplan. While the basic targets of the one-year plan for a given region as a whole are updated on the basis of the data of statistical administrations, these targets are volatile since union ministries make frequent changes in the plans of subordinate enterprises and organizations. The regional five-year plan is ratified by the Council of Ministers of a union republic on the basis of targets that it has set for the economy subordinate to it as well as on the basis of data obtained and gathered from union and union-republic agencies. In the Azerbaijan SSR, for example, this is done in two stages: regional targets are first of all ratified for a very limited number of indicators; several months later, after the data have been collected and refined, they are ratified for a much larger number and targets are then assigned to republic ministries and agencies, to organizations of union subordination, and to regional subdivisions (Nakhichevan ASSR, Nagorno-Karabakh Autonomous Oblast as well as cities of republic subordination). The thus-prepared five-year plan is ratified by the union republic's Council of Ministers and is conveyed as a mandatory document to all parties responsible for carrying it out.

A five-year plan that is formed in this way is unstable. Union ministries and agencies may amend the plan of a subordinate enterprise and indeed they do so repeatedly since they only feel responsible for fulfilling the general plans assigned to them (there is no kind of document issued by

republics). As a result, targets, rates and balance are altered. It seems to us that this must be avoided by instituting the following procedure: following the ratification of the plan by the USSR government, USSR Gosplan should distribute the basic targets that have been assigned to union ministries among the various union republics. This will raise the responsibility of union ministries not only to fulfill the five-year plan, but to fulfill it with respect to the republics as well. The key targets that should be centrally assigned to union republics include: growth rate of industrial output, output volume of basic types of products, capital investment (with a breakdown for housing construction and environmental protection), and the growth of labor productivity and profit.

An even more limited number of indicators is assigned to autonomous republics and oblasts in the one-year plan. The Azerbaijan SSR, in particular, for the most part ratifies and assigns to autonomous republics, oblasts and cities of republic subordination targets pertaining to the economy directly subordinate to them (the targets assigned to rayons primarily pertain to the purchasing of agricultural products). The five-year plan ratifies and assigns to indicated republics, oblasts and cities a relatively broader range of indicators that embrace enterprises and organizations of local, republic and in part union-republic subordination.

The decree of the CPSU Central Committee, Presidium of the USSR Supreme Soviet and USSR Council of Ministers "On Further Raising the Role of the Soviets of People's Deputies in Economic Construction" expanded the powers [of local Soviets?] and defined more precisely the function and range of indicators ratified by the local Soviets compared with the intent of the decree of the CPSU Central Committee and the USSR Council of Ministers "On Improving Planning and Strengthening the Influence of the Economic Mechanism on Increasing the Effectiveness of Production and Improving the Quality of Work." The procedure for drafting regional five-year and one-year plans must also be more clearly defined since only then will it be possible to speak of evaluating plan fulfillment. What is more, the potential of the Soviets will also be enhanced in the course of the implementation of the decision of the May (1982) Plenum of the CPSU Central Committee placing them in charge of agro-industrial associations.

We deem it advisable to establish a procedure whereby the one-year plan of a city or rayon would be the sum of targets assigned to the economy subordinate to them; for enterprises and organizations of republic, union-republic and union subordination--the sum of plans tallied by Central Statistical Administration agencies based on the totals for January of the current year. In this form, the plan must be compiled by local planning and statistical agencies and approved no later than the middle of February by the ispolkoms of the respective Soviets of People's Deputies. The one-year plan for autonomous republics, krays and oblasts should be drafted in approximately the same way as for union republics. However the range of indicators ratified by them should be slightly narrower. For example, it should not include: growth rates of national income, distribution of the volume of industrial output between group 'A' and group 'B', the target of raising real per capita income, social labor productivity, etc.

In our opinion, the regional five-year plan should be based on targets ratified by councils of ministers of union republics on the basis of data supplied by republic, union-republic and union enterprises and organizations. The regional five-year plan (broken down by year) should be ratified by councils of ministers of ASSR's and by ispolkoms of kray, oblast, city and rayon Soviets of People's Deputies no later than 3 months after the adoption of the national [obshchegosudarstvennyi] plan. The plan for the subordinate economy should be ratified at an earlier time to be specified by the government. It is essential to see to it that the plan spells out specific departmental responsibility and that enterprises or organizations whose work influences the level of fulfillment of the regional five-year plan in one direction or the other be identified when the results are subsequently tallied.

It would appear to be necessary to set up a system of indicators that could be used to evaluate the fulfillment of five-year and one-year plans of union and autonomous republics, krays, oblasts, cities and rayons. The reason for this (as indicated above) is that indicators defining the rates and proportions of regional development are not specified in the union plan, but are determined as the sum of indicators adopted at various levels of management. Consequently, we must try to unify these indicators, some of which should be applied to all levels. One system of indicators should be established for union republics, another for autonomous republics, krays and oblasts and a third for cities and rayons. The introduction of these indicators will foster unity in the planning, accounting and evaluation of fulfillment of five-year and one-year plans and, what is no less important, will help USSR ministries and departments to announce regional plan targets in good time.

Accordingly, we believe that the indicators used to evaluate the fulfillment of the five-year plan should be approximately as follows: for rayons and cities--output in physical terms; output in the highest quality category; growth of labor productivity, trade turnover and consumer services; activation of production capacities, housing, schools, sociocultural facilities, and municipal service institutions. For autonomous republics, krays and oblasts (and possibly, cities of republic subordination), the following indicators should be added to those listed above: increase in industrial output volume; fulfillment of capital construction plan; activation of fixed capital; freight shipment; growth of profit. In addition, the list of indicators for union republics should include: growth of national income; production of means of production (group 'A') and consumer goods production (group 'B'); productivity of social labor; real income; per capita payments and benefits from social consumption funds. Appropriate agricultural development indicators are added for each level of management.

It should be noted that the procedure proposed in the above guidelines for evaluating plans in an ascending total does not essentially differ from the existing one. Monthly and quarterly plans and the evaluation of their fulfillment are preserved. Even in the past, five-year plans were evaluated in an ascending total for growth rates of industrial and agricultural output, increases in labor productivity, etc. The new feature here is that the fulfillment of quantitative targets (output, work volume, etc.)

must be counted as the sum of targets for the years for which the evaluation is made (plan, actual). A feasibility study should be made of the inclusion of absolute data both for the year and in an ascending total in the five-year plan for industrial and agricultural production.

According to decree No 695 (12 July) of the CPSU Central Committee and the USSR Council of Ministers, the planning, accounting and evaluation of plan fulfillment in an ascending total presuppose securing the more complete utilization of production capacities, stable and balanced plans and the rhythmic work of production collectives. This is only possible if safeguards are established against shifting the plan from month to month, from quarter to quarter, which creates the impression that the plan is being fulfilled. To correct this serious flaw, plan targets should be established in an ascending total and in addition in value indicators--their growth rates should be reckoned in terms of the corresponding period in the base year. Thus the plan would be ratified for January, January-February, January-March, January-April, etc. The evaluation would be based on the target ratified in the state plan (or formulated for the region in January) and subsequently planning and statistical agencies would make no changes in the plan whatsoever (except for corrections based on the decision of the government).

At the same time, it should be noted that the evaluation of performance in an ascending total did not find proper reflection in the Model Statute on Bonuses, which was edited by USSR Goskomtrud [USSR State Committee for Labor and Social Problems] and the AUCCTU. This statute states that bonuses to ITR [engineering and technical personnel] are based on their monthly and quarterly performance. It also states that if the quarterly plan is fulfilled but the ascending total is lower than the plan since the beginning of the year, the size of the bonus is merely reduced. On the other hand, if the quarterly plan is underfulfilled, but the preceding quarterly plans are overfulfilled and the plan has also been fulfilled from the beginning of the year, bonuses will not be paid to ITR. This does not foster initiative in management. It would appear that Goskomtrud and the AUCCTU should make the necessary corrections in the model statute.

The guidelines previously referred to state that "five-year plan production growth targets for a union republic, ASSR, kray, oblast as well as for administrative regions and cities are based on the commodity output indicator; the same indicator is used to evaluate the fulfillment of these targets."[3] They tacitly assume that the fulfillment of the regional one-year plan will also be evaluated on the basis of commodity output. From this it logically follows that the commodity output indicator in the plan (in comparable enterprise wholesale prices) must apply at all levels all the way from the state plan for the USSR to those specifically responsible for carrying it out. Only in such a case can the plan retain its unity, i. e., the sum of the plans of enterprises will reflect the ministry's plan and the sum of the plans of the republics will reflect the plan of the entire country. Thus the commodity output plan must be conveyed to the enterprises (let us assume in the form of an estimate, as in the case of gross output) and they must be accountable and answerable for its fulfillment. Otherwise there will be no mechanism to secure the fulfillment of this evaluative indicator at the regional level.

The experience of many enterprises that have been converted to NChP [normative net output] shows that the levels of fulfillment of the plan for production volume and labor productivity growth with respect to NChP and commodity (gross, saleable) output not only do not coincide but are frequently quite disparate.

Given the existence of several evaluative indicators (commodity output, saleable output, NChP, NSO [normative cost of processing]) and the substantial disparity between them, it was asked which of the indicators should be mandatory for the enterprise (association) at the same time that the fulfillment of the five-year plan (in an ascending total by year) will be evaluated on the whole on the basis of commodity output for a rayon, city or region. We must not permit such a differentiation of the fulfillment of plan targets according to these indicators since each of them has its specific purpose and in their aggregate they are designed to provide a correct evaluation of the production collective's performance.

In connection with the foregoing and requests received, in April 1982 USSR Gosplan and the USSR Central Statistical Administration offered a clarification of how to evaluate plan fulfillment at the regional level. Thus, plan fulfillment of enterprises (associations) converted to NChP will be evaluated on the basis of that indicator while those not converted to NChP will be evaluated on the basis of saleable output. A similar situation developed in the case of ministries whose plan targets for output volume and labor productivity growth are established on the basis of NChP. Their performance will be evaluated on the basis of NChP while the performance of the other ministries will be evaluated on the basis of saleable output is current prices (fulfillment of output volume plan) and commodity output in comparable prices (according to the growth of output and labor productivity). At the regional level, the output volume plan will be formulated and its fulfillment evaluated on the basis of saleable output; the target of increasing output volume and labor productivity will be evaluated on the basis of commodity output (in comparable prices).

It is also stated that if an enterprise (association) converted to planning based on NChP fulfills an NChP plan target, but does not fulfill (calculated) plan indicators for saleable and commodity output, the respective plan data are re-calculated in accordance with the level of plan fulfillment based on NChP. These corrections also apply to plans at the regional level.

As we see, many value indicators for planning and evaluating plan fulfillment according to output volume continue to exist. This means that some managers--in their pursuit of high rates of fulfillment (growth) of the saleable (commodity) output indicator--will continue to have the opportunity to underfulfill the production plan in physical terms and to undersupply their clients. What is more, the planned volume of saleable output is not coordinated with the enterprise's portfolio of orders since it is formulated earlier (and according to different methods), while delivery contracts are concluded later.

In connection with the foregoing, we deem it expedient to consider the question of establishing a procedure such that all enterprises would fulfill monthly, quarterly and annual plans in an ascending total: for the

rayon and city--(in physical indicators) on the basis of: the delivery of output to the customer; normative net output (if this indicator has been assigned to all enterprises); the growth of labor productivity; and output in the highest quality category; for the oblast, kray and republic--also on the basis of the growth rates of production, labor productivity and profit.

The five-year plan for commodity output (in comparable prices) fixes the growth rate for output volume in 1981-1985 that is communicated to those responsible for meeting it. This rate serves as a guidepost (a mandatory one) in drafting one-year plans. Other targets have also been communicated. But it should be taken into account that decree No 695 of the CPSU Central Committee and USSR Council of Ministers states that "in individual cases, when the indicators of the draft one-year plan for a USSR ministry or a union republic as a whole prove to be lower than the indicators established for the corresponding year of the five-year plan, they are subject to the ratification of the USSR Council of Ministers at the behest of the respective USSR Ministry, Council of Ministers of a union republic or USSR Gosplan." However, the observance of this point has not as yet become mandatory for everyone. In the process of drafting the one-year plan, the proper attention is not paid to the way in which a USSR ministry (department) or union republic has fulfilled the five-year plan in an ascending total for the preceding period and no provision is made to correct existing lags. The present forms used to draft the one-year plan do not make it possible to analyze the fulfillment of the five-year plan in an ascending total. For a number of sections, these forms allow for the comparison of projected targets with the condition adopted for that year in the five-year plan.

Accordingly, it is our view that these forms should be changed and that it should be specified that in the process of examining and formulating one-year plans, special attention must be focused on the possibility of correcting lags in output and in the performance of work and services in preceding years of the five-year plan.

Associations, enterprises and organizations that regularly fulfill and even surpass their one-year targets of the five-year plan in an ascending total should be rewarded: their economic incentive funds should be increased by the share of overfulfillment of the five-year plan in an ascending total and conversely, the economic funds of organizations failing to fulfill the five-year plan should be lowered. Certain sections in the statutes governing the formation and use of these funds should be strengthened. Analogous rewards and sanctions should be applied to ministries and departments in industry, construction and transport.

Let us also discuss the following question. In the absence of reliable data (ex post and ex ante), in the process of drafting one-year plans for subsidiary industry (enterprises, organizations, kolkhozes and sovkhozes), plan growth targets for industrial output in the coming year should be ratified only for enterprises that are carried on an independent balance all the moreso because operational returns for it are not available. Subsidiary industry should be considered only in five-year plans and in the evaluation of plan fulfillment in an ascending total. It would appear that the time has come to resolve the question of which enterprises and

organizations should be classified as belonging to subsidiary industry. According to a USSR Gosplan decision (adopted approximately 20 years ago), industrial output volume considered in the state plan does not include trade, consumer cooperative and consumer service enterprises, but does include the volume of work performed by repair shops belonging to rayon divisions of Soyuzsel'khoztekhnika. Statistical agencies have a different view of this matter. In particular, they do not classify shops of Sel'khoztekhnika divisions as belonging to the productive sphere.

The question of improving planning and evaluating the fulfillment of five-year and one-year plans at the regional level is exceptionally timely now that the country has set forth and is implementing measures to increase the effectiveness of social production.

FOOTNOTES

1. "Materialy Plenumy Tsentral'nogo Komiteta KPSS 22 noyabrya 1982 goda" [Materials of the 22 November 1982 CPSU Central Committee], Moscow, Politizdat, 1982, p 8.

2. "Sovershenstvovaniye khozyaystvennogo mekhanizma. Sb. dokumentov" [Improving the Economic Mechanism. Collection of Documents], Moscow, "Pravda," 1982, p 151.

3. Ibid., p 152.

5013
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REGIONAL DEVELOPMENT

INTERRELATIONSHIP BETWEEN ECONOMIC, ECOLOGICAL PROBLEMS STRESSED

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 12, Dec 83 pp 84-88

[Article by M. Dolishniy, chief of the L'vov department of the Institute of Economics, UkSSR Academy of Sciences, doctor of economic sciences and professor: "The Interrelationship between Economic and Ecological Problems in a Region"*]

[Text] Under the conditions of the scientific and technical revolution, particular urgency is assumed by the problem of further improving the territorial and sectorial structure of the country's economy and finding optimal relationships between the economic system and the environment, between requirements for economic development and the necessity of protecting nature and improving its condition.

In light of these tasks, a significant place is assigned to research connected with optimization of the industrial development of individual regions, taking into account the requirements for environmental protection.

Two approaches have taken shape in nature conservation activity at present: the differentiated and the comprehensive approaches. The essence of the first approach is that individual elements of the natural environment (water, soil, air) become the object of protection. Such protection, as a rule, responds to the interests of one sector of production and does not cover all the large number of relationships which take place in nature.

The comprehensive approach is based on the fact that each resource is an integral part of nature as a whole. Any influence on one resource will entail changes in another one. For this reason, entire nature complexes become the objects of protection. Such an approach requires the efforts of many organizations and different branches of sciences. Its basic task is optimization of the interrelationships between society and nature with the aim of rational use, conservation and reproduction of natural resources, taking the requirements of the entire economy into account.

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* In order of organization.

The many measures being taken to protect the natural environment are yielding definite results: biological resources are being increased and ecological systems are being improved. But, on the other hand, the increase in public production, which requires broader and broader involvement of natural resources, is leading toward a change in the natural environment, and often toward unpleasant consequences as well. Some of them may become serious obstacles in the path of the development of industry and agriculture and limit opportunities to meet the people's demands for valuable relaxation.

With the current scope of man's effect on nature it is necessary to foresee harmful consequences and to define ways of preventing or eliminating them in order not to permit extensive disruptions of the natural environment. This refers primarily to territories which are recreationally valuable (used for relaxation), which ofter lose the qualities which meet the people's demands for relaxation and recovery of health. Polluted air and water and damaged landscapes cannot be an environment for man's sanitation; they directly or indirectly affect his vital activity and reproduction of the labor force. The urgent need to regulate the adverse effects of man on the territories of health resort and tourist complexes, of which the Carpathian region is a part, is quite evident. Unique recreational resources are concentrated here. The Carpathian Mountains, where there are many picturesque localities and spots (river valleys, forests, mountain ranges, waterfalls, lakes), are especially valuable in this regard. The alpine lakes (there are about 30 of them) are as beautiful as any known throughout the world. The region numbers over 800 springs and wells of therapeutic mineral waters with a total flow of about 60,000 cubic meters daily. In chemical composition and therapeutic properties they are similar to nearly all the well-known types, and some of them are unique. There are many sanatoriums, dispensaries and hydropathic establishments operating in the Carpathians which use the therapeutic mineral waters. The health resorts of Truskavets and Morshin are widely known. But the opportunities which exist are not fully utilized and not always effectively. In the five deposits of therapeutic peat mud in the cis-Carpathian region are concentrated 1.3 million cubic meters of the valuable therapeutic substance, and the Borislav ozokerite deposits are the largest in the USSR.

Rational use of natural resources and their overall application significantly increases effectiveness in treating ill persons. Every year about 1 million persons undergo treatment in the Carpathians. The effectiveness of further development of the health resorts, rest areas and tourist centers is determined to a large extent by the prospects for utilization of natural resources. This gives rise to the need for formation of the Carpathian Territorial Recreational Complex (KTRK), which, by representing the total number of sanitation institutions and associated infrastructure enterprises united by close production ties and joint use of the territory and labor and natural resources, can ensure maximum satisfaction of the people's needs for treatment and relaxation.

The instrument of the KTRK's formation is the comprehensive special-purpose program "Rational Utilization and Optimization of the Carpathians' Recreational Potential," which is making it possible to develop scientific bases for the rational use of the Carpathian region's natural resources in the interests of man. According to preliminary estimates, its territory can accommodate an

additional 15 specialized sanatoriums for 8,500 beds, 30 holiday hotels and 27 rest homes, and the capacity of sanitary institutions can be increased 8-10 times as much without detriment to the natural environment. Optimal capacity of recreational territories during the summer season, taking into account the standards for maximum permissible burdens on the nature complexes, has been determined at 11 million persons. To resolve the complex and multifaceted problems which have arisen in creating the comprehensive special-purpose program, it is necessary to unite and coordinate the activities of specialists of different types and departments. With this objective, the interdepartmental scientific-production association "Rekreatsiya," the leading organization of which is the L'vov department of the Institute of Economics of the UkSSR Academy of Sciences, was organized within the Western Scientific Center of the UkSSR Academy of Sciences.

Further development of recreation entails optimization of the structure of the economy of the region, where there exist, together with extensive recreational resources, significant reserves of sulfur, petroleum, potassium salts and other minerals. Large industrial enterprises are operating on the basis of them. Forestry and agriculture are being developed intensively in the region.

Accelerated development of the region's national economic complex is leading to expansion of the capacity of operating mines and quarries and involvement in new deposits, as a result of which forested areas are being reduced, the areas of arable land and other agricultural lands are being decreased, and anthropogenic geological processes and manifestations are being brought about. In the majority of cases, the recreational use of some territories is being reduced or excluded in general.

Taking the significant national economic value of the Carpathians into account, the economic utilization of their natural --including recreational--resources should be carried out in such a way as to ensure the optimal alternative for involving them in public production with simultaneous maximum conservation of the region's natural features and prevention of harm to the natural environment. For this reason, purposeful nature protection activity, based on a comprehensive intersectorial approach, is necessary in recreational areas. Two paths are now being planned to resolve the problem of protecting the environment from pollution. The first one is to eliminate harmful emissions with the aid of purifying installations. But all ecological problems cannot be resolved by such a method. Another, more basic method is the "ecologization" of production. It consists of modifying the production process in such a way that detrimental effects on the natural environment are not brought about or they are immediately eliminated. In other words, it means the creation and introduction of wasteless [bezotkhodnyye] processing methods.

Some researchers distinguish several stages in the process of ecologization.* The first stage calls for improvement in industrial processes and construction of purifying installations; the second stage calls for introduction of low-emission and closed industrial processes, complete processing of raw material,

*I. Ya. Blekhtsin, V. A. Mineyev, "Proizvodstvennyye sily SSSR i okruzhayushchaya sreda" [Productive Forces of the USSR and the Environment], Moscow, Mysl', 1981, pp 36-37.

and recovery of consumption waste; and the third stage calls for creation of systems of total wasteless production with their additional special combines for reprocessing all industrial and household wastes into materials which are subject to natural regeneration or suitable for economic use.

In analyzing the effect of industry on the environment, it should be noted that the nature of the ecological problems which arise in the process depends on the specialization of industrial centers and complexes.

Industrial development is exerting a more and more tangible effect on the environment: air, water and soil are being polluted, and the topography of terrain and the vegetation are being altered.

Open processing of minerals in deep pits is disrupting the hydrologic cycle of underground waters. Thus, as a result of the withdrawal of water from an open pit when sulfur was mined, the mineral waters of spring No 3 of the Shklo deposit (Lvov Oblast) have lost their therapeutic properties.

The majority of lands require recultivation. Even when the underground method of smelting sulfur with hot water is used, chemical substances which are toxic to vegetation are washed out. They saturate the upper layers of soil, complicating the process of recultivation.

Working of mineral deposits in most cases leads to a decrease in the recreational potential of a territory. In order to optimize the process of mining and the recreational use of such territories, it is necessary to develop mineral deposits where their working will inflict minor damage on the recreational potential; to use the most advanced technology (from the point of view of the ecological-economic aspect) for the extraction, transportation and reprocessing of raw material in the working of deposits; to introduce complete, overall reprocessing of basic and by-product raw material everywhere and to utilize strip rock [vskryshnyye porody]; to recultivate all areas which are being depleted and which have been worked out previously for replacement of their natural--including natural-recreational--potential; and to identify and utilize for economic purposes, including recreational purposes, certain underground areas worked. The use of closed underground workings as facilities for cafes, restaurants, mining museums and sanat riums is in common practice. Thus, in Solotvino (Transcarpathian Oblast) a sanatorium for asthma patients has been in the underground area of depleted salt mines. The problem of utilizing the mine workings of the Stebnik Potassium Plant in Lvov Oblast in the same way is being examined. It is expected that the effectiveness of the treatment here will be even greater than in Solotvino.

Protection of the atmosphere is a very important problem. It is enough to note that a person's lungs pass through 10,000-12,000 cubic meters of air in 24 hours. The cleaner it is, the more completely the oxygen in it is assimilated, and the more actively the gas exchange takes place in the tissues of our organism. The basic polluters of air usually are thermal power plants, chemical and cement industry enterprises, boiler rooms, and transport. Polluted air not only is detrimental to a person's health, but interferes with the

functional activity of plants and deteriorates the condition of water and soil as well. The situation also is aggravated by the fact that harmful substances may be carried for significant distances, and local pollution develops into regional pollution.

The very important conclusion that follows from this is that a necessary condition to ensure both preservation of the air as well as recreational resources as a whole is the prevention and elimination of harmful wastes not only in the localized region of the resources cited, but the territories next to them as well.

In order to prevent pollution by harmful substances, it is necessary to establish new purifying installations and to utilize them more effectively, to introduce wasteless processing methods, to landscape territories, and primarily at enterprises located near health resorts and tourist centers.

The pollution of waters, rivers in particular, presents a serious danger to protection of the recreational potential.

Purification of the waters assumes improvement in the technological methods to clean them and the introduction into production of processing methods which use little or no water. In cities, it is necessary to accelerate construction of purification installations with biological purification of the water.

The forests of the Carpathians are of great importance in protecting the soil and water and regulating the climate; in addition, they are the source of valuable timber for industry, construction and agriculture. The nature-protection relationship of forests is increased with regard to the formation of the Carpathian recreational complex.

The water and soil conservation role of forests lies in the fact that they transfer the surface drainage to within the soil, thereby preventing the washing away and erosion of soil and the onset of landslides and mud flows, they regulate the water system of mountain rivers, and reduce the intensity of floods. By retaining and absorbing harmful gases and by giving off oxygen, the forest areas are performing an important air-purifying function.

Reinforcement of the nature-protection functions of the Carpathian forests depends on their economic use. Taking into account the special purpose, the forests of the Carpathians are classified with Group I and II forests. Group I includes protective forests and especially designated forests (green areas around cities, health resorts, preserves, natural monuments). The basic source for timber procurements is the Group II forests, the area of which is nearly twice as large as that of the Group I forests. Such a division makes for more rational use and reproduction of forest resources. However, the harm inflicted on the Carpathian forests in the postwar period in connection with the large demand for timber has turned out to be quite significant. Moreover, cases of violation of the estimated norms for the volume of timber cut still exist, which reduces the protective functions of the forest and depletes forest resources. The development of erosion processes, deterioration of the water

system of mountain rivers, and the onset of mud flows and windfalls are the result of man's effect on the forests. Haphazard processes and manifestations inflict great financial losses on the national economy numbering tens of millions of rubles annually. In addition, they lead to degradation of especially valuable natural landscapes, complicating their use for relaxation and tourism.

The great national economic importance of the Carpathian forests dictates the need for a scientifically grounded, differentiated approach to forest use. Treatment of the Carpathian forests has to be radically changed, and they have to be considered not only as a source of timber, but as an important nature conservation factor and a recreational resource as well. Further forestry operations in the Carpathians should be carried out in accordance with the optimal alternative, which involves an increase in the role of the forest's protective functions and its preservation for future generations. For this it is advisable, in our view, to transfer the forests of the mountainous part of the Carpathians to Group I. It is necessary to adhere to strictly grounded norms for the felling of timber, taking into account optimal tree growth, and to maintain the optimal volumes for timber procurement. The basic types of felling should become the freely-selective and group-selective types, and mass clearcutting should be limited and absolutely forbidden on steep slopes and near the upper limit of the forest. Measures must be carried out to prevent the beginning of haphazard processes and manifestations, and to reforest all steep slopes in the sections of mountain river basins which are dangerous to villages [seloopasnyye uchastki], as well as those unsuitable for agricultural land use, and to build hydraulic installations. Our estimates show that expenditures for these measures are being recovered in 3 years.

At lumbering and lumber processing enterprises, wasteless processing methods must be more widely introduced, which will contribute to timber savings and preservation of the forest for recreational purposes. The experience of the Vygoda Logging Combine in Ivano-Frankovsk Oblast may serve as an example of a prudent, zealous relationship toward the forest. The logging combine not only utilizes the felled timber from which it derives the maximum output, but it also conducts a large amount of timber restoration work. Here 96 percent of all felled timber is being reprocessed. In the 22 years of the logging combine's existence, the volume of timber felled has been reduced by five times as much, and the volume of output produced has increased by four times as much.

Natural parks are an efficient form of organizing recreational activity at the same time that the natural features of a territory are preserved. The complexity of their creation stems from the multifaceted and varied nature of the tasks facing them (protection of unique landscapes, rare and endangered animal life, regulation of economic activity, organization of relaxation for the masses and tourism). For this reason, a very important problem is the functional zoning of natural parks, that is, the setting aside of territorial zones with different methods of protection and nature use.

The Carpathian State Natural Park was created in 1980. It does not cover a wide area, and the possibility of unfavorable effects on the park from neighboring territories which are in economic use is not being excluded. With the increased

number of persons relaxing in this region, the burdens on the natural environment are being increased, often exceeding permissible norms. Many other territories of the Carpathians also require special conditions for nature use.

For this reason, it is necessary to create new natural parks in the Carpathians which will make it possible, on one hand, to preserve and increase the natural resources, and on the other hand, to expand areas for relaxation.

Further development of the economy of the region and improvement in its territorial and sectorial structure is linked with obligatory solution of the problems of protecting the environment, inasmuch as the measures taken recently are not always producing the desired results. To a large extent, this also is impeded by interdepartmental interests, but nature needs only one master. A number of specialized institutions engaged in environmental protection are subordinated to different ministries and departments and duplicate each other in certain aspects of their activity. For example, in the territory of Ivano-Frankovsk Oblast, supervision of the condition of the water is being performed by the inspection center for nature protection, the health and epidemiology station, and the basin administration for regulating the use and protection of the waters of the upper course of the Dnestr and mountain rivers, and the hydrometeorological bureau. Problems of protecting the air in the basin are handled by five organizations.

In determining the most effective ways of resolving ecological problems, we must proceed from the fact that environmental protection is becoming a specialized type of economic activity, objectively reflects economic relationships, and is an integral part of public production. An urgent need has emerged to improve the management of nature protection activity. All nature protection activity should be headed by local soviets of people's deputies, provided with broad authority in the field cited in conformity with the Law of the Union of Soviet Socialist Republics of 25 June 1980 "On the basic powers of kray and oblast soviets of people's deputies and the soviets of people's deputies of autonomous oblasts and autonomous okrugs."

Nature protection activity in recreational regions should be aimed at ensuring the best conditions for developing sanatoriums and health resort facilities, relaxation and tourism. For this reason, subdepartments [podotdely] may be created under the departments of overall territorial planning and distribution of productive forces of union republics' Gosplans for the planning and development of recreational complexes and environmental protection which coordinate the work of the oblast soviets of people's deputies on the problems cited.

Environmental protection complexes should become the basic form of organization for nature protection activity. They should include a group of organizations, institutions and enterprises functioning efficiently through stable, mutual ties (ensured by the management of one program), and their principal objective should be the creation of normal ecological conditions in the environment. The structure of the complex may be depicted as follows: an organ of management attached to soviets of people's deputies: projects which are polluting the environment; enterprises producing equipment and installations for the utilization

and rendering harmless of detrimental wastes and exhausts; organs of environmental supervision; scientific organizations and design bureaus. But a purely formal unification of them in one combination does not mean the appearance of a complex, since those ties and the coordination of actions which would make it possible to resolve ecological problems effectively do not exist among the facilities mentioned above. A comprehensive special-purpose program in which all components are functioning meets the requirements cited.

A comprehensive special-purpose program certainly must examine the economic mechanism of the functioning of the complex. At the same time, economic measures should prevent infliction of harm on the environment by pollution and provide for compensation. The problem of forming an environmental protection fund still has to be resolved. These funds may be concentrated in the oblast soviets of people's deputies and be spent at their discretion to carry out nature protection measures in the region. A part of them may be used for providing incentive to enterprises.

In planning nature protection measures, efficient combination of sectorial and territorial principles of planning will be of great importance. Ministries and departments of the USSR and the councils of ministers of union republics must develop and approve as part of the five-year plans measures for protecting nature and the environment, as well as for the use of by-products, secondary materials, and so forth.

In the entire complex of nature protection measures, an important place will be devoted to instilling in persons the sense of a prudent relationship toward natural resources. Each person should realize that nature is our home and "we will not, however, labor under the delusion of our victories over nature. It will take vengeance on us for each such victory."*

Preventing pollution of the environment is of great economic and social importance. Successful solution of this problem will contribute to further increase in the people's well-being and to improvement in the conditions of their labor, domestic life and relaxation.

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* K. Marx and F. Engels, "Sochineniya" [Works], Vol 20, pp 495-496.

8936
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END RESULTS OF SCIENTIFIC-TECHNICAL PROGRESS DISCUSSED

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 11, Nov 83 pp 68-72

[Article by Professor V. Kamayev, doctor of economic sciences: "The End Results of Scientific and Technical Progress Under Socialism"]

[Text] Improvement of the physical factor of economic growth and the raising of its qualitative level are the content of the end results of scientific and technical progress [NTP] as an economic category. As a most important condition to the resolution of historically determined socioeconomic problems under the conditions of socialist society, NTP is a most important means of securing the planned and comprehensive improvement of developed socialism, of making the transition to predominantly intensive economic development, of increasing its economic and social effectiveness, of making working conditions easier, of making the work more challenging, of securing the all-round reduction of the share of manual, semiskilled and heavy labor, of ensuring the dynamism and continuous proportionality of economic growth. The social character of the application of advances in science and technology determines the socioeconomic nature of the end results of NTP and their integral connection with socialism's highest goal.

The role of NTP is mounting under present conditions for a number of reasons and especially in connection with new socioeconomic problems faced by our society and also because many economic growth factors have become limited in their scope and effectiveness. The nation's demographic situation, the deteriorating conditions of mineral extraction, the necessity of compensating the negative impact of production on the environment, etc., can be listed among these factors. It should be noted that the scale and complexity of the task of improving developed socialism will grow continuously, that virtually all conditions complicating the development of the national economy will last for a long time and that this confirms the urgency that the end results of NTP hold for theory and practice.

The utilization of the attainments of NTP also acquires particular significance because the development of science and technology under present conditions is one of the main directions in the competition between socialism and capitalism.

The functioning and development of all elements of the economic system of mature socialism are ultimately subordinate to the goal of further improving the well-being of the Soviet people and to the improvement of the socialist way of life. In planning practice, this finds expression in the Comprehensive Program for NTP and Its Socioeconomic Consequences for a 20-Year Period, in the basic directions of economic and social development for a 10-year period, in five-year plans for the development of the national economy, and in special integrated scientific and technical programs. In accordance with the decree of the CPSU Central Committee and the USSR Council of Ministers "On Measures to Accelerate Scientific and Technical Progress in the National Economy," all-union, republic as well (interrepublic), and branch (interbranch) scientific and technical programs of regions and territorial production complexes will be developed starting with the 12th Five-Year Plan. The fulfillment of plans and targets for the development of science and technology will be one of the key indicators used to evaluate the economic performance of associations and (enterprises).

The objective function of NTP under the conditions of improving mature socialism can be pictured in the form of the following basic components:

--securing the planned increase in output volume coupled with an increase in the effectiveness of production. Economics literature devoted to problems of NTP occasionally do not call attention to the fact that to many branches of the national economy--particularly in Subdivision II and the extractive industry--the problem of increasing output is not less urgent than the problem of increasing the effectiveness of production. The increase in the output volume of these branches is an important condition to eliminating disproportions in the national economy;

--making blue-collar work easier and more challenging;

--developing new branches of industry. The possibility of tooling up for new types of production in a relatively short time and with minimal costs on the basis of flexible production systems;

--reducing negative influences on the environment to a minimum.

As socialist economic practice and scientific forecasts show, the total and effective realization of the indicated socioeconomic tasks is impossible when the attainments of only the evolutionary forms of NTP are used, but presupposes the broad introduction of the attainments of the revolution in science and technology and the consistent transition to new production techniques. The June (1983) Plenum of the CPSU Central Committee stated: "The principal path to making a qualitative change in the productive forces is, of course, the transition to intensive development and the combination of the advantages of our socialist system with the attainments of the revolution in science and technology. What is more, its most recent stage promises a technological revolution in many spheres of production."[1]

Such is the fundamental formulation of the question of the end results of NTP under the conditions of developed socialist society. Economic research

on these results must encompass the end results of NTP and the factors that determine them in their unity with the corresponding elements of the economic mechanism. The present article has attempted to examine the end results of NTP at two basic levels: at the level of the national economy and at the level of the association (enterprise).

The above-enumerated forms of utilizing the attainments of NTP constitute an increase in the so-called useful effect of the implements and objects of labor and of the technology and organization of production.[2] The growth of the useful effect--economic or social--is a necessary attribute of the combination of the attainments of progress in science and technology with the advantages of the socialist economic system. If there is no increase (or no qualitatively new) useful effect, NTP makes no sense to society, and the capital and labor expended on it can naturally be considered net losses.

The useful effect in material production is a form in which the use value to society is manifested and realized. Thus, the useful effect of an electrical generator is its power; the useful effect of an industrial robot is the ability to perform certain operations per unit of time, etc. Many economists now agree that the use value to society is an economic category.[3] It follows from this that the use value, like its form, is also an economic category. At the same time, the useful effect in the system of socialist economic categories is directly associated with the end result category. It appears that the useful effect relates to the group of economic categories that are inherent in all phases of social reproduction: production, distribution, exchange and consumption.

The time has now come to develop and substantiate methods for comparing the useful effects of both substitutable and different material goods and to investigate the quantitative determinacy of social use value. One possible direction of such a study is the "useful effect" category. And if up to now, the reference has primarily been to the economic useful effect, under present conditions more and more importance is acquired by the social effect which in practice is calculated together with the economic effect.

An important characteristic of the useful effect and its enhancement as a result of the use of the attainments of NTP is the requirement that it be consistent with science-production and socioeconomic needs, i. e., its social character. An increase in the useful effect of a certain means of production (technology) must correspond to the needs of the given branch or enterprise. Thus increasing the carrying capacity of freight cars is one of the principal means of improving the work of the Ministry of Railways. But the increase in the useful effect cannot by any means always be evaluated positively. In practice, there are frequent cases when an increase in the useful effect proves to be unnecessary to a given enterprise thereby resulting in a so-called redundant useful effect. For example, some models of machinery produced by domestic machine tool building enterprises possess such an effect (redundant power and precision of machining).

An important demand made on new technology is that it produce an ever changing product mix with the aid of installed equipment and that it

satisfy the needs of a specific customer to the fullest. The need to realize this demand is manifested in the fact that highly productive automatic machine tool lines that were widespread several decades ago began to lose their useful effect. The present trend is to create automatic lines on a fundamentally new basis (they now include machines and machine tools with numerical programmed control; industrial robots and manipulators; and control devices based on mini- and microcomputers.

The dynamism of modern production is associated not only with the continuous introduction of new equipment and technology. One aspect of the useful effect of equipment is the potential of its modernization and rapid renovation. The revolution in science and technology has significantly accelerated the rate of obsolescence of products and therefore the design of machinery and equipment must incorporate the technological and economic potential of their modernization (for example, on the basis of relatively independent modules).

Trends in the development of large-scale machine production in the second half of the 20th century include the integration of independent production processes into complex chains containing a significant number of units of equipment. When the useful effect of NTP is determined under these conditions, the effect of the technical improvement of an entire production complex or more precisely of an entire enterprise rather than the effect of individual machines is decisive. Therefore, it is far from always expedient to strive to achieve the maximum useful effect of an individual machine or aggregate. Its optimum is determined by the correlation of the useful effects of associated equipment. Otherwise, there may arise the redundant useful effect which was discussed above. This circumstance should be considered in the process of planning the technical development of the enterprise.

It would appear that the useful effect of NTP materialized in productive capital, technology, and in the organization of labor and production in a given association (enterprise) can be considered more precisely not only for the volume of output but also for indicators of effectiveness--labor productivity, output-capital ratio and material-intensiveness. While the useful effect under specific production conditions depends not only on NTP, the methods that are used to calculate effectiveness make it possible to determine its share in improving economic production indicators. In our opinion, it is expedient to use the profitability formula as an integral indicator of effectiveness: the ratio of profit resulting from industrial activity to the average annual value of fixed productive capital and normed working capital.

The social useful effect of NTP acquires ever greater significance in the process of perfecting developed socialism. Based on the actual skill structure of personnel in the material production sphere, their general education, the existing level of NTP, the financial and material potential of the national economy under present conditions, it is obviously possible to assume that the social useful effect of NTP must primarily consist in reducing the use of manual, heavy, semiskilled and monotonous labor. Approximately 40 percent of the work force is engaged in this kind of labor

and in the last 7 years this indicator has improved by only 0.7 points a year. At the same time, according to the data of the USSR TsSU, the share of workers with higher and secondary (complete and incomplete) education increased from 40.1 to 76.0 percent between 1959 and 1979, i. e., almost doubled. Naturally, society must provide them with work, the conditions and content of which would meet their higher social requirements.

The historical character of the useful effect of many attainments of NtP was noted above. One of the relatively new trends in this area is the fundamental change in the socioeconomic useful effect of such a technical means as the conveyer, which is widely used in industry and which for many decades has contributed to higher labor productivity, to the stability of the production process and of product quality. Domestic and foreign experience has shown that in many instances the conveyer is socially unacceptable when the labor of highly skilled workers is involved. Today it is in a number of instances replaced by the brigade organization of labor and in the future it will be replaced by flexible production automation.

By the very nature of developed socialist society, the economic and social useful effects and the corresponding end results of NTP are harmonious. The more progress we make in improving mature socialism, the more we must secure the social useful effect. However, we must never forget that the economic useful effect and the economic end results are always the material base from which the social useful effect forms. Up to now, the discussion has focused on determining the useful effect of the production apparatus as the end result of NTP at the level of the primary cost accounting link of the national economy. It seems to us that when we determine the end result of NTP at the level of the national economy, we should take the increase in national income realized as a result of NTP (in comparable prices) and calculate the dynamics of labor productivity, the output-capital ratio, the material intensiveness and general effectiveness, considering that their growth expresses an increase in the useful effect of the nation's production apparatus. However, at the same time it is necessary to consider a number of important circumstances. First, the physical structure of national income (or its growth) does not by any means always fully correspond to the structure of society's requirements. The critical issue here is not to secure proportionality, but rather to derive an optimal effect from the use of producer goods and consumer goods, including the creation of certain reserves of material resources and production capacities.[4] Second, the correlation between the socially necessary and actual levels of quality of producer goods and consumer goods is not always observed.[5] Third, the volume of national income created and national income used differs in the degree of losses. While a certain percentage of these losses is unquestionably due to the mismanagement of some managers and production workers, most of them stem from the imbalance in the corresponding elements of the production apparatus (transport, packaging and warehouse facilities, etc.), which has been quite persuasively described in the press. We note that the disparity between created and utilized national income tends to rise. While in 1970, the disparity in their dynamic indexes was 4 points (1965 = 100), by 1983 it was 20 points.

The increase in the useful effect of the country's production apparatus is the most important indicator of the effectiveness of NTP. However, the end result of NTP must also be characterized from the standpoint of the cost of increasing the useful effect.

Under certain circumstances, there is no need to increase the useful effect of new equipment, but it is important to reduce costs. The possibility is not excluded that the useful effect of equipment may even be diminished if costs are reduced to an even greater degree. This may happen in the case of a redundant useful effect.

The reduction of costs per unit of useful effect (unit costs) cannot be approached from a purely quantitative standpoint. The point is that they consist of the cost of developing new equipment and its operation by the customer. Foreign and domestic practice suggests that primary attention should be given to reducing the customer's unit costs even if the producer's costs rise in the process (at the same time that the general sum of costs declines). For example, the increased reliability of machines entails higher production costs, which are offset by greater economy of operation. The higher measure of reliability reduces the manual labor of repair workers and the number of machine tool in the repair shops.

The lowering cost per unit of useful effect is an economic regularity of the revolution in science and technology. Unfortunately, in a number of machine building branches, the unit cost of the useful effect of the product has been rising over a long period of time while the end results of NTP have declined. During the last five-year plan, a considerable part of the increase in capital investment was used to compensate the decline of the economic useful effect of new equipment. As could be assumed, imperfections in the economic mechanism are among the reasons underlying the increase in the unit cost of the useful effect.

The lack of the necessary proportionality distorts the relationship between society's need for new machines (which is expressed by the customer enterprise) and their production. At the present time, industrial ministries are responsible for supplying the national economy with the appropriate types of products. It follows from this that they must compare society's need not with output volume in cost terms but rather with the magnitude of its useful effect and must guarantee not the operation of the machinery and equipment for a certain period of time but rather their correspondence to the nominal useful effect.

The need to obtain a greater useful effect coupled with the relatively more rapid lowering of unit costs is the driving force behind NTP and hence behind the improvement of its end results at all levels of the socialist economy. In practice, the economic mechanism satisfies these needs through two basic channels. The first channel is centralized planning. It appears that today this element of the economic mechanism performs more of a control than a stimulating function. The fulfillment of NTP targets is not reflected in the formation of economic incentive funds. The dynamics of the number of models of new types of machinery, equipment, apparatus and instruments developed each year by industry can serve as one of the proofs

of this thesis. Taking the level of the 1st Five-Year Plan as 100 percent, the indicator for the 8th Five-Year Plan was 91.9; for the 9th--83.6; and 10th--80.4 percent.

The other channel is material incentives for producing new equipment. To date, the uniform fund for the development of science and technology and price markups on products in the highest quality category do not fully compensate the higher costs associated with the production of new equipment. However, since the lack of the proper proportionality does not permit the relatively free choice of the supplier enterprise, when the customer enterprise enters into a contract, it cannot in full measure ascertain the useful effect of the product that is supplied to it. Accordingly, the length of time that new equipment is to be produced according to pronouncements in the design stage may not give the national economy the increase in useful effect it needs.

The decree of the CPSU Central Committee and the USSR Council of Ministers "On Additional Measures to Broaden the Rights of Production Associations (Enterprises) in Industry in Planning and in Economic Activity and On Increasing Their Responsibility for Their Performance" opens up new possibilities for accelerating NTP and for improving its end results. Relative to the problem of accelerating NTP and increasing its end results in terms of economic policy, this means a certain change in the use of the relative economic separateness of production associations (enterprises).

The most significant point is that it is being used more widely to develop the initiative and realize the potential of enterprises. This will be expressed in the smaller number of indicators ratified in the five-year plan and in the fact that the evaluation of the economic performance of labor collectives is based primarily on the degree to which a given enterprise satisfies a given enterprise's social needs with regard to the useful effect of its product. The latter is reflected in the target to raise the technical level (quality) of output. Thus, centralism in planning is aimed at securing society's interests by securing the interests of the customer enterprise.

The broadening of the rights of enterprises also improves their conditions of operation. A significant percentage of the new potential (rights) of the enterprise is aimed at improving the end results of NTP. The enterprise and its labor collective are interested in meeting state targets, i. e., in satisfying society's needs at the lowest cost. It follows from this that this area of the enterprise's activity must be planned differently than production or the fulfillment of contractual commitments. Essentially, the problem is to plan the activity of enterprises in the realm of NTP not directly but through targets for raising the technical level of production. Thus where society is concerned, the broadening of the enterprise's rights does not diminish its economic function in any way, but rather raises the responsibility of the objects of management--the primary links in the national economy. At the same time, this means the more complete and broader participation of the working people in the management of the economy, in the utilization of social socialist property and at the same time in the acceleration of NTP and in improvement of its end results.

FOOTNOTES

1. "Materialy Plenuma Tsentral'nogo Komiteta KPSS 14-15 iyunya 1983 goda" [Materials of the 14-15 June 1983 Plenum of the CPSU Central Committee], Moscow, Politizdat, 1983, p. 10.

2. Here and beyond, the article will discuss equipment intended for use in production.

3. See: PRAVDA, 5 Aug 83.

4. The creation of reserve capacities for preparing and assimilating the production of new types of equipment is provided for in the decree of the CPSU Central Committee and the USSR Council of Ministers "On Measures for Accelerating Scientific and Technical Progress in the National Economy."

5. The socially necessary level of output is understood to mean the correspondence of its quality to the best domestic and world products.

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